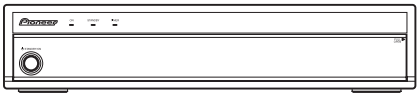
Pioneer sound.vision.soul

Service Manual



PDA-V100HD

ORDER NO.
ARP3470

HD AV CONVERTER

PDA-V100HD

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Model	Type	Power Requirement	Remarks
PDA-V100HD	WYV5	AC 220 - 240 V	

For details, refer to "Important Check Points for good servicing".

PIONEER CORPORATION 4-1, Meguro 1-chome, Meguro-ku, Tokyo 153-8654, Japan
PIONEER ELECTRONICS (USA) INC. P.O. Box 1760, Long Beach, CA 90801-1760, U.S.A.
PIONEER EUROPE NV Haven 1087, Keetberglaan 1, 9120 Melsele, Belgium
PIONEER ELECTRONICS ASIACENTRE PTE. LTD. 253 Alexandra Road, #04-01, Singapore 159936
ⓒ**PIONEER CORPORATION 2007**

T-ZZR SEPT. 2007 Printed in Japan

SAFETY INFORMATION

This service manual is intended for qualified service technicians ; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.
Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

[Important Check Points for Good Servicing]

In this manual, procedures that must be performed during repairs are marked with the below symbol.
Please be sure to confirm and follow these procedures.

1. Product safety

Please conform to product regulations (such as safety and radiation regulations), and maintain a safe servicing environment by following the safety instructions described in this manual.

① Use specified parts for repair.

Use genuine parts. Be sure to use important parts for safety.

② Do not perform modifications without proper instructions.

Please follow the specified safety methods when modification(addition/change of parts) is required due to interferences such as radio/TV interference and foreign noise.

③ Make sure the soldering of repaired locations is properly performed.

When you solder while repairing, please be sure that there are no cold solder and other debris.
Soldering should be finished with the proper quantity. (Refer to the example)

④ Make sure the screws are tightly fastened.

Please be sure that all screws are fastened, and that there are no loose screws.

⑤ Make sure each connectors are correctly inserted.

Please be sure that all connectors are inserted, and that there are no imperfect insertion.

⑥ Make sure the wiring cables are set to their original state.

Please replace the wiring and cables to the original state after repairs.
In addition, be sure that there are no pinched wires, etc.

⑦ Make sure screws and soldering scraps do not remain inside the product.

Please check that neither solder debris nor screws remain inside the product.

⑧ There should be no semi-broken wires, scratches, melting, etc. on the coating of the power cord.

Damaged power cords may lead to fire accidents, so please be sure that there are no damages.
If you find a damaged power cord, please exchange it with a suitable one.

⑨ There should be no spark traces or similar marks on the power plug.

When spark traces or similar marks are found on the power supply plug, please check the connection and advise on secure connections and suitable usage. Please exchange the power cord if necessary.

⑩ Safe environment should be secured during servicing.

When you perform repairs, please pay attention to static electricity, furniture, household articles, etc. in order to prevent injuries.
Please pay attention to your surroundings and repair safely.

2. Adjustments

To keep the original performance of the products, optimum adjustments and confirmation of characteristics within specification.
Adjustments should be performed in accordance with the procedures/instructions described in this manual.

3. Lubricants, Glues, and Replacement parts

Use grease and adhesives that are equal to the specified substance.
Make sure the proper amount is applied.

4. Cleaning

For parts that require cleaning, such as optical pickups, tape deck heads, lenses and mirrors used in projection monitors, proper cleaning should be performed to restore their performances.

5. Shipping mode and Shipping screws

To protect products from damages or failures during transit, the shipping mode should be set or the shipping screws should be installed before shipment. Please be sure to follow this method especially if it is specified in this manual.

CONTENTS

SAFETY INFORMATION 2
1. SERVICE PRECAUTIONS 5
1.1 NOTES ON SOLDERING 5
1.2 NOTE ON INSULATORS AND THEIR SET SCREWS 5
2. SPECIFICATIONS 6
2.1 ACCESSORIES 6
2.2 SPECIFICATIONS 7
2.3 PANEL FACILITIES 8
3. BASIC ITEMS FOR SERVICE 11
3.1 CHECK POINTS AFTER SERVICING 11
3.2 PCB LOCATIONS 12
4. BLOCK DIAGRAM 13
4.1 POWER SUPPLY UNIT 13
4.2 OVERALL BLOCK DIAGRAM 14
4.3 HDMI BLOCK DIAGRAM 16
5. DIAGNOSIS 17
5.1 BASIC EXPLANATIONS 17
5.2 TROUBLE SHOOTING 20
6. SERVICE FACTORY MODE 28
6.1 FACTORY MODE 28
7. DISASSEMBLY 46
7.1 BONNET CASE and PANEL 46
7.2 PCB LOCATION 47
8. EACH SETTING AND ADJUSTMENT 47
9. EXPLODED VIEWS AND PARTS LIST 48
9.1 PACKING SECTION 48
9.2 EXTERIOR SECTION 50
9.3 FRONT PANEL SECTION 52
10. SCHMATIC DIAGRAM 54
10.1 MAIN ASSY (1/15) BOARD IF BLOCK 54
10.2 MAIN ASSY (2/15) AV IO BLOCK 56
10.3 MAIN ASSY (3/15) AV SW BLOCK 58
10.4 MAIN ASSY (4/15) RGB SW BLOCK 60
10.5 MAIN ASSY (5/15) VDEC BLOCK 62
10.6 MAIN ASSY (6/15) ADC BLOCK 64
10.7 MAIN ASSY (7/15) IF UCOM BLOCK 66
10.8 MAIN ASSY (8/15) MAIN UCOM BLOCK DIA. 68
10.9 MAIN ASSY (9/15) IP BLOCK 70
10.10 MAIN ASSY (10/15) DSEL BLOCK 72
10.11 MAIN ASSY (11/15) HDMI SW1 BLOCK 74
10.12 MAIN ASSY (12/15) HDMI SW2 BLOCK 76
10.13 MAIN ASSY (13/15) RX BLOCK 78
10.14 MAIN ASSY (14/15) TX BLOCK 80
10.15 MAIN ASSY (15/15) DSEL A BLOCK 82
10.16 FRONT ASSY 84
10.17 232C ASSY 86
10.18 VIDEO ASSY 88
10.19 LED ASSY 90
10.20 VOLTAGE 91
11. PCB CONNECTION DIAGRAM 92
11.1 MAIN ASSY 92
11.2 FRONT, 232C, VIDEO and LED ASSYS 96
12. PCB PARTS LIST 98

1. SERVICE PRECAUTIONS

1.1 NOTES ON SOLDERING

- For environmental protection, lead-free solder is used on the printed circuit boards mounted in this unit.
  Be sure to use lead-free solder and a soldering iron that can meet specifications for use with lead-free solders for repairs accompanied by reworking of soldering.

- Compared with conventional eutectic solders, lead-free solders have higher melting points, by approximately 40 ºC.
  Therefore, for lead-free soldering, the tip temperature of a soldering iron must be set to around 373 ºC in general, although the temperature depends on the heat capacity of the PC board on which reworking is required and the weight of the tip of the soldering iron.

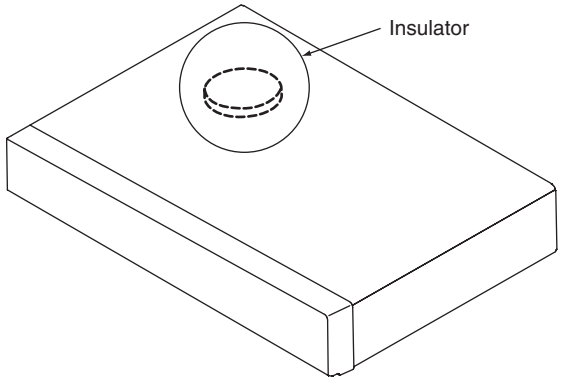
Do NOT use a soldering iron whose tip temperature cannot be controlled.

Compared with eutectic solders, lead-free solders have higher bond strengths but slower wetting times and higher melting temperatures (hard to melt/easy to harden).

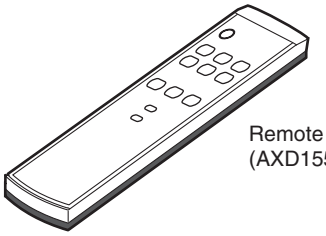
The following lead-free solders are available as service parts:
- Parts numbers of lead-free solder:
  GYP1006 1.0 in dia.
  GYP1007 0.6 in dia.
  GYP1008 0.3 in dia

1.2 NOTE ON INSULATORS AND THEIR SET SCREWS

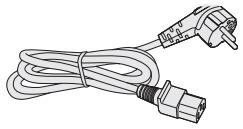
For compliance with the safety standards, removal of the insulators and their set screws, as shown in the figure below, is prohibited. If they are removed, this product may not meet the official standards. NEVER remove these parts from the product.



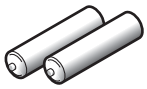
2. SPECIFICATIONS
2.1 ACCESSORIES



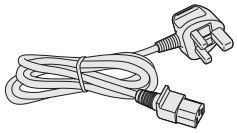
Remote control unit
(AXD1557)



Power Cord
For Europe, except UK and Republic of Ireland
(ADG1214)

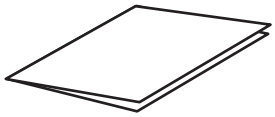


Dry Cell Battery
AA size batteries x 2
(for remote control unit)

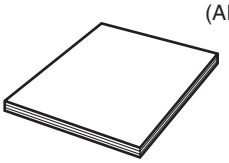


Power Cord
For UK and Republic of Ireland
(ADG1223)

Warranty card



Operating instructions
(ARE1481)



2.2 SPECIFICATIONS

Specifications

Power Requirements		220 V to 240 V AC, 50 Hz/60 Hz, 12 W (0.4 W Standby)
Dimensions		420 mm (W) 90 mm (H) 299 mm (D)
Weight		3.3 kg
Colour System		PAL/SECAM/NTSC 3.58/NTSC 4.43/PAL 60
Terminals Rear	INPUT 1	HDMI in[*1], AUDIO[*3]
	INPUT 2	COMPONENT VIDEO, AUDIO
	INPUT 3	SCART[*3] (AV in, S-VIDEO in, RGB in), HDMI in[*1*3]
	INPUT 4	HDMI in[*1], AUDIO[*3]
	INPUT 5	S-VIDEO in, AV in
	INPUT 6	HDMI in[*1*2]
	CONTROL IN/OUT	1
	OUTPUT	HDMI out[*1]

[*1] This conforms to HDMI1.3 and HDCP1.1. HDMI (High Definition Multimedia Interface) is a digital interface that handles both video and audio using a single cable. HDCP (High-bandwidth Digital Content Protection) is a technology used to protect copyrighted digital contents that use the Digital Visual Interface (DVI).

[*2] Not supported during PDP combination mode

[*3] Switchable

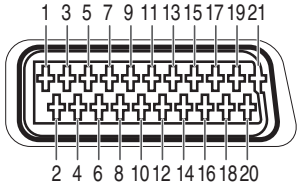
Design and specifications are subject to change without notice.

Trademarks

HDMI, the HDMI logo and High-Definition Multimedia Interface are trademarks or registered trademarks of HDMI Licensing LLC.

SCART pin assignments

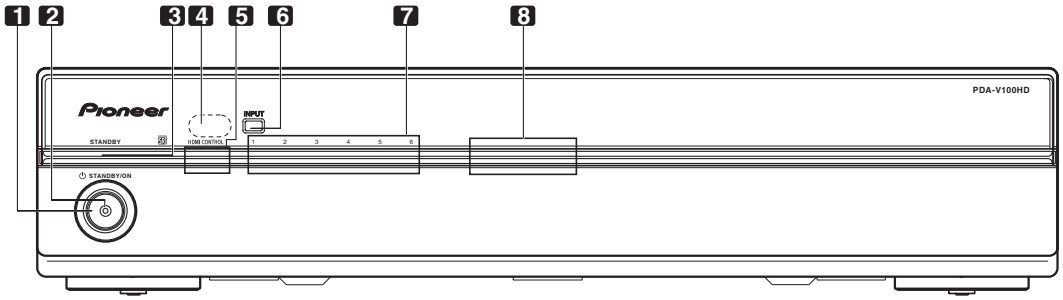
Various audio and video devices may be connected via the SCART terminals.



SCART (INPUT 3)		
1 Not used	2 Audio right input	3 Not used
4 Common earth for audio	5 Earth for Blue	6 Audio left input
7 Blue input	8 Not used	9 Earth for Green
10 Not used	11 Green input	12 Not used
13 Earth for Red	14 Earth for Red/Green/Blue control	15 Red input
16 Red/Green/Blue control	17 Not used	18 Earth for Video input
19 Not used	20 Video input	21 Plug shield

2.3 PANEL FACILITIES

Front



1 STANDBY/ON button
Press to set power to ON/STANDBY.

2 Power ON indicator (blue)
Lights blue when unit power is turned ON.

3 STANDBY indicator (red)
Lights red when unit power is set to STANDBY.

4 Remote control unit sensor
Point the remote control unit at this sensor when operating.

5 HDMI CONTROL indicators (Left: orange/ Right: green)
When this unit is connected to a plasma television, these indicators light under the following conditions:

a. PDP combination mode:
Lights green when **HDMI CONTROL** switch is set to **ON**, and the unit's connected plasma television can be operated using the latter's remote control unit.

b. Independent 1 mode:
Lights orange when the **HDMI CONTROL** switch is set to **ON.**

c. Independent 2 mode:
Do not light when the **HDMI CONTROL** switch is stet to **OFF.**

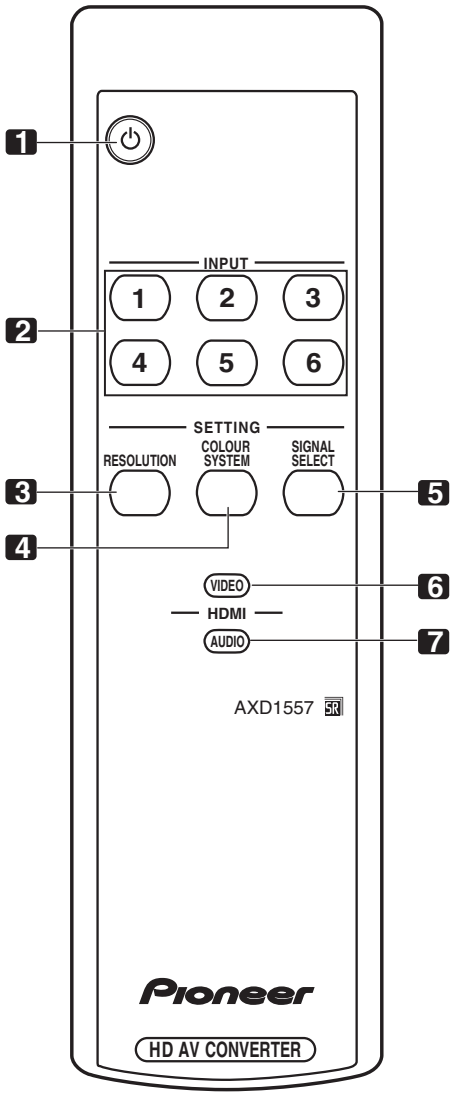
6 INPUT button
Use to select the unit's source INPUT 1 to INPUT 6.

7 Input indicators
Notifies user of currently selected input and currently set mode.

8 Blue illumination
Lights blue when unit power is turned ON. Flashes blue during setting mode.

Remote control unit

Point the remote control at the unit to operate.



1 ⏻ button
Press to set power to ON/STANDBY.

2 INPUT buttons
Press to select the unit's source INPUT 1 to INPUT 6.

3 RESOLUTION button
Use to set output resolution when converting analog input signals to HDMI.

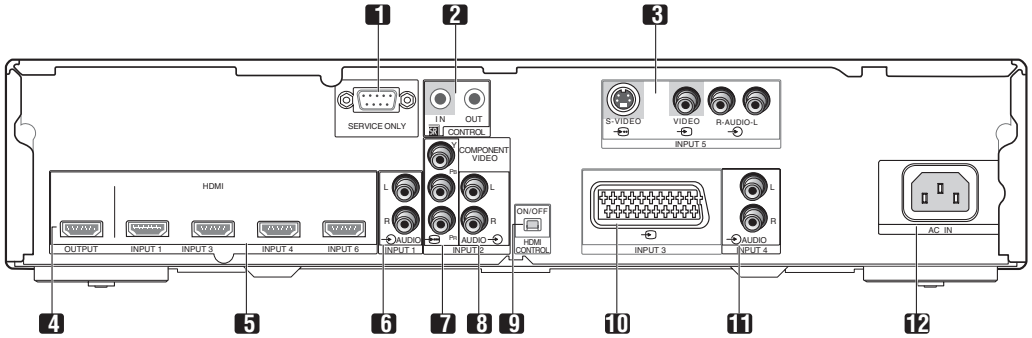
4 COLOUR SYSTEM button
Use to set the colour system for analog input signals.

5 SIGNAL SELECT button
Use to select input signal for INPUT 3.

6 VIDEO button
Use to set the colour format when converting analog input signals to HDMI.

7 AUDIO button
Use to set the type of audio signal during HDMI input.

Rear



1 Factory adjust connector
Do not connect anything to this connector.

2 CONTROL IN/OUT connectors
Connect to Pioneer components bearing the mark.

3 INPUT 5 connectors (S-VIDEO, VIDEO, AUDIO)
Connect to the output connectors of components such as Blu-ray disc (BD) players, DVD players, DVD recorders, Set-Top Box (STB), VCRs, game machines, camcorders, etc.

4 OUTPUT connector (HDMI)
Connect to the HDMI connector of a television supporting the High-Definition Multimedia Interface (HDMI).

5 INPUT 1, INPUT 3, INPUT 4, INPUT 6 connectors (HDMI)
Connect to the HDMI connector of components supporting the High-Definition Multimedia Interface (HDMI), such as BD players, DVD recorders, etc.

6 INPUT 1 connectors (AUDIO)
Connect to a component's analog audio output connectors.

7 INPUT 2 connectors (COMPONENT VIDEO: Y, PB, PR)
Connect to the appropriate output connectors of a BD player, DVD player, DVD recorder, etc.

8 INPUT 2 connectors (AUDIO)
Connect to audio output connectors of BD player, DVD player, DVD recorder, etc.

9 HDMI CONTROL switch
Set to **ON** when this unit is connected to a Pioneer plasma television; set to **OFF** when connected to another manufacturer's television.

10 INPUT 3 connector (SCART)
Connect to the appropriate output connector of a BD player, DVD player, DVD recorder, etc.

11 INPUT 4 connectors (AUDIO)
Connect to a component's analog audio output connectors.

12 AC IN
Connect one end of the supplied power cord to this connector, and the other end to a household AC outlet.

3. BASIC ITEMS FOR SERVICE

3.1 CHECK POINTS AFTER SERVICING

Items to be checked after repair (PDP)

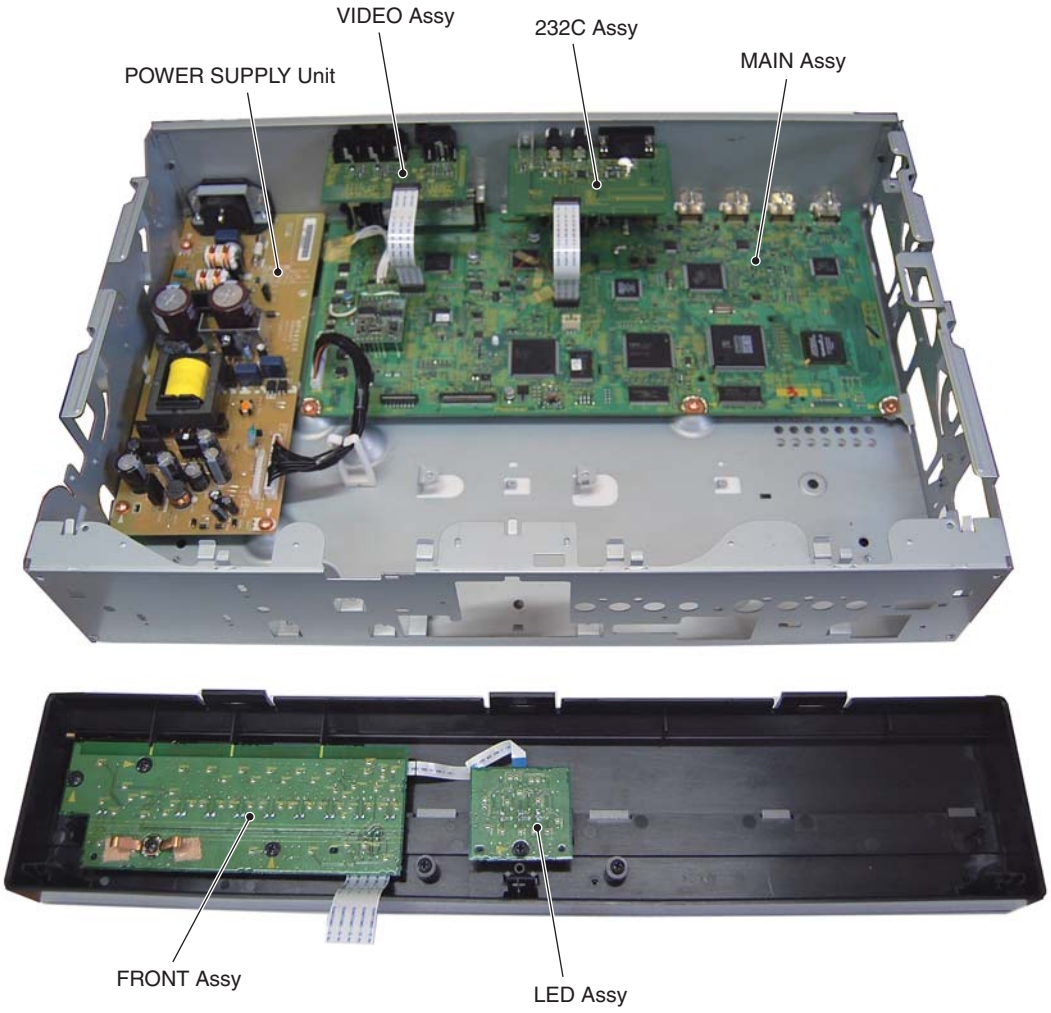
To ensure the quality of the product after repair, check the recommended items shown below:

No.	Procedures	Item to be checked
1	Check if all the symptoms pointed out by the customer have been addressed.	The symptoms in question must not be reproduced.
2	Connect the peripheral equipment.	Connect all external peripheral equipment as originally connected and check if the connections are correct.
3	Check the video and audio.	Tune in to the stations that the customer would normally receive and check if video and audio are normal.
4	Check the buttons and controls.	Use the buttons and controls on the remote control unit and main unit and check if they operate properly.
5	Check the cabinet.	Check for any scratches or dirt that have been made or attached on the cabinet after receiving the product for repair.

See the table below for the items to be checked regarding video and audio:

Item to be checked regarding video	Item to be checked regarding audio
Block noise	Distortion
Horizontal noise	Noise
Dot noise	Volume too low
Disturbed image (video jumpiness)	Volume too high
Too dark	Volume fluctuating
Too bright	Sound interrupted
Mottled color	

3.2 PCB LOCATIONS



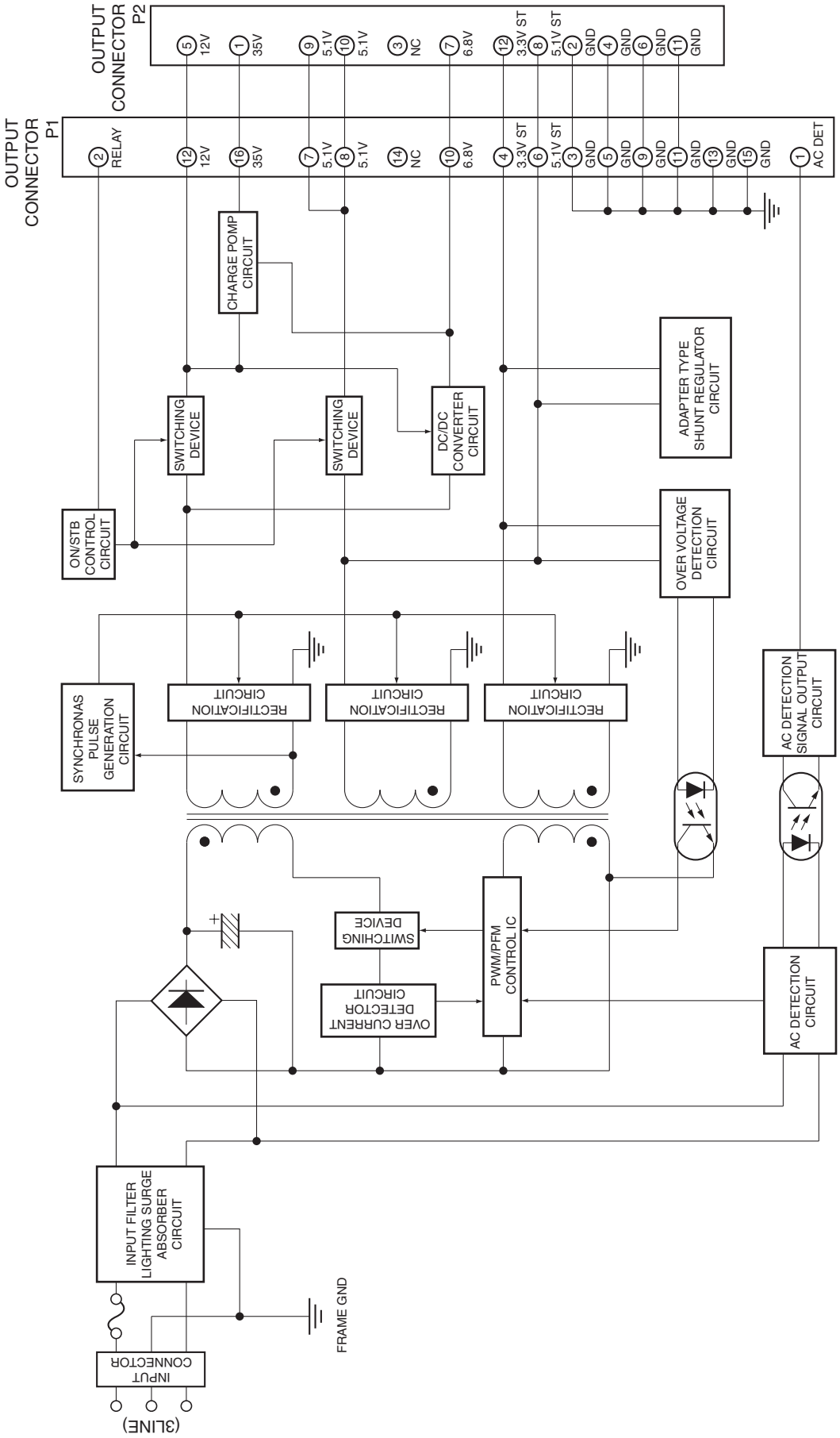
NOTES: ● *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
● *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*

◆LIST OF ASSEMBLIES

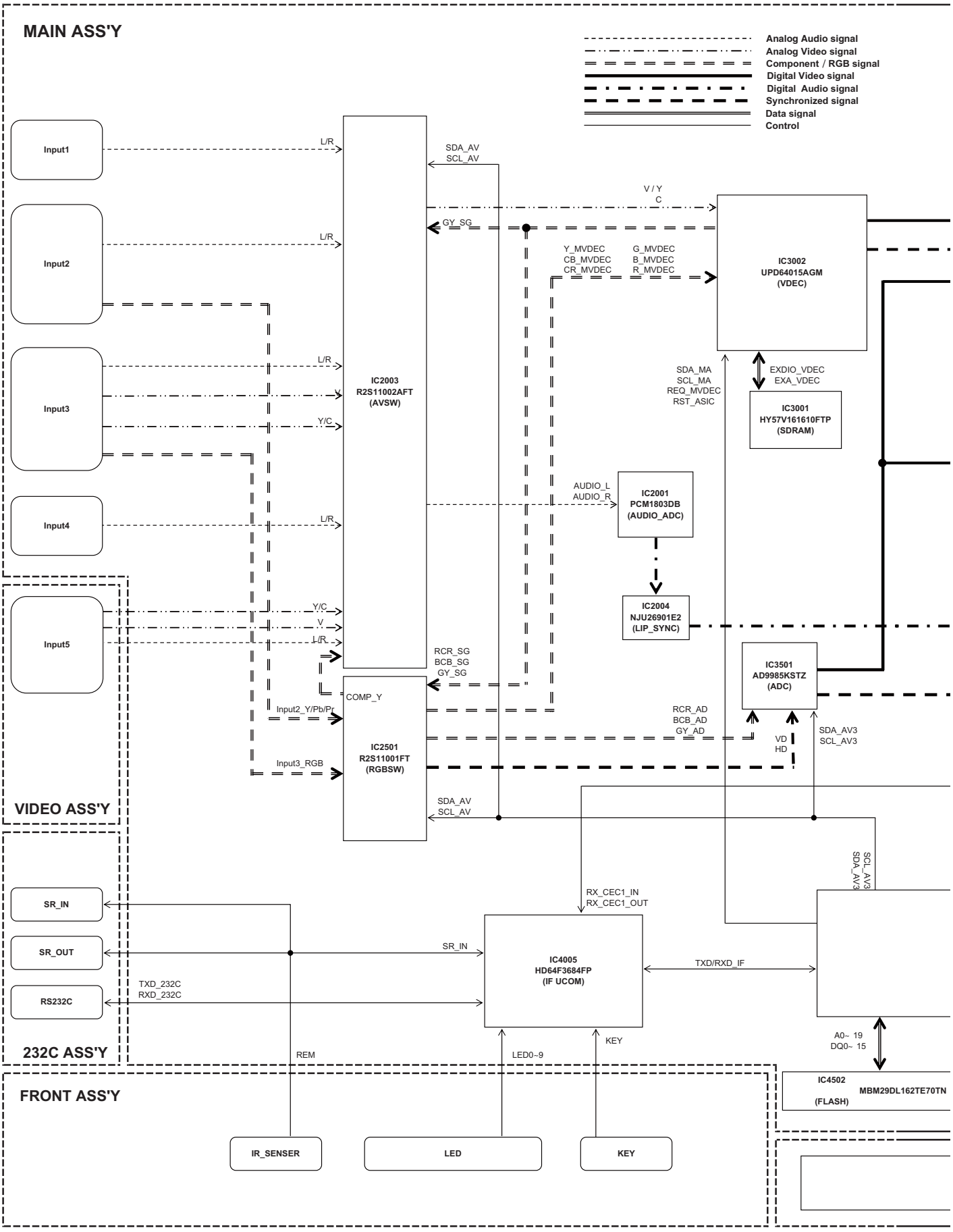
Mark	No. Description	Part No.
	1.. MAIN ASSY (SW)	AWV2520
NSP	1.. FUKUGOU ASSY	AWV2521
	2.. FRONT ASSY	AWW1296
	2.. 232C ASSY	AWW1297
	2.. VIDEO ASSY	AWW1298
	2.. LED ASSY	AWW1299
⚠	1.. POWER SUPPLY UNIT	AXY1205

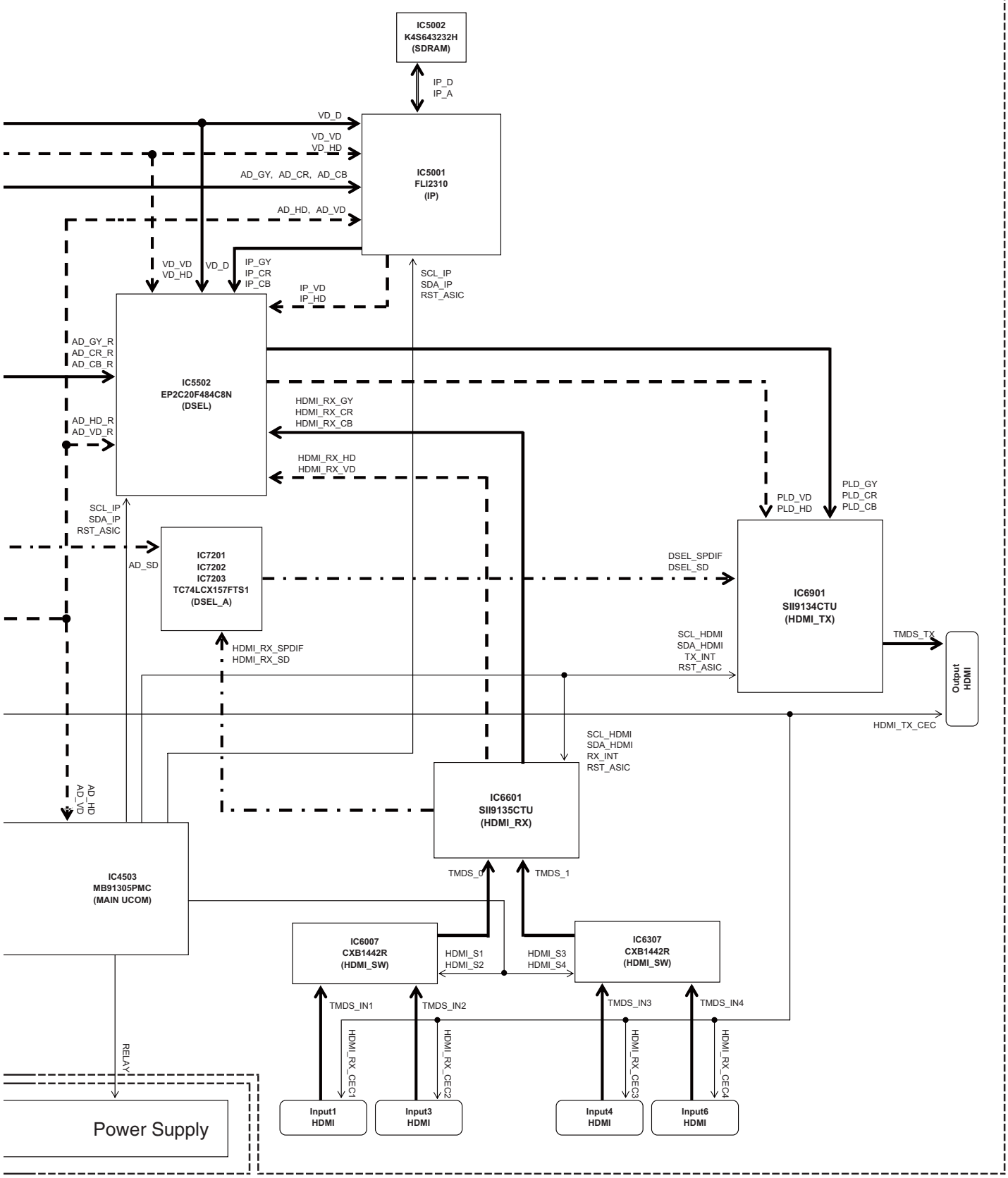
4. BLOCK DIAGRAM
4.1 POWER SUPPLY UNIT

POWER SUPPLY UNIT



4.2 OVERALL BLOCK DIAGRAM




IC5002
K4S643232H
(SDRAM)
IP_D
IP_A
VD_D
VD_VD
VD_HD
AD_GY, AD_CR, AD_CB
AD_HD, AD_VD
IC5001
FLI2310
(IP)
VD_VD
VD_HD
VD_D
IP_GY
IP_CR
IP_CB
IP_VD
IP_HD
SCL_IP
SDA_IP
RST_ASIC
AD_GY_R
AD_CR_R
AD_CB_R
AD_HD_R
AD_VD_R
IC5502
EP2C20F484C8N
(DSEL)
HDMI_RX_GY
HDMI_RX_CR
HDMI_RX_CB
HDMI_RX_HD
HDMI_RX_VD
PLD_VD
PLD_HD
PLD_GY
PLD_CR
PLD_CB
SCL_IP
SDA_IP
RST_ASIC
AD_SD
IC7201
IC7202
IC7203
TC74LCX157FTS1
(DSEL_A)
DSEL_SPDIF
DSEL_SD
IC6901
SII9134CTU
(HDMI_TX)
TMDS_TX
Output
HDMI
SCL_HDMI
SDA_HDMI
TX_INT
RST_ASIC
HDMI_RX_SPDIF
HDMI_RX_SD
HDMI_TX_CEC
SCL_HDMI
SDA_HDMI
RX_INT
RST_ASIC
IC6601
SII9135CTU
(HDMI_RX)
AD_HD
AD_VD
IC4503
MB91305PMC
(MAIN UCOM)
TMDS_0
TMDS_1
IC6007
CXB1442R
(HDMI_SW)
HDMI_S1
HDMI_S2
HDMI_S3
HDMI_S4
IC6307
CXB1442R
(HDMI_SW)
TMDS_IN1
TMDS_IN2
TMDS_IN3
TMDS_IN4
HDMI_RX_CEC1
HDMI_RX_CEC2
HDMI_RX_CEC3
HDMI_RX_CEC4
RELAY
Input1
HDMI
Input3
HDMI
Input4
HDMI
Input6
HDMI
Power Supply

4.3 HDMI BLOCK DIAGRAM

The IF and MAIN microcomputers handle system control.
The video and audio signal system consists of the HDMI digital, composite, component, and RGB signals.

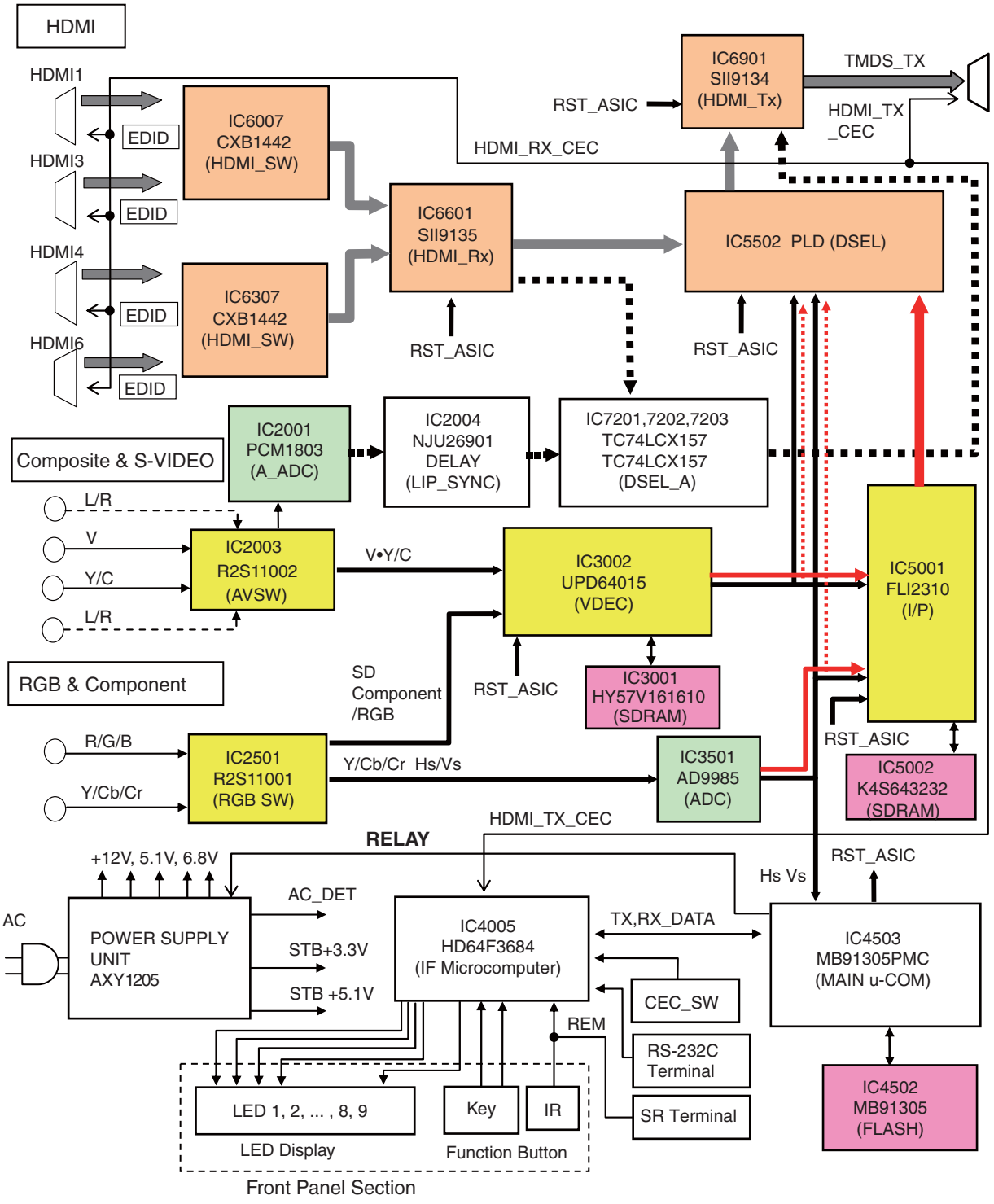


Fig. 2: Block Diagram

5. DIAGNOSIS
5.1 BASIC EXPLANATIONS

1. Input/Output System of the PDA-V100HD

A schematic of system connections for the PDA-V100HD is shown in Fig. 1.
The PDA-V100HD itself is not provided with a user interface, such as a GUI. It converts video and audio signals from the connected external devices into HDMI digital signals and outputs.

Connect external devices, such as a DVR, DVD recorder/player, and STB, to the PDP via the PDA-V100HD AV Converter. Connect the TV antenna and the PC directly to the PDP. Connect the PDA-V100HD and the PDP, using the HDMI terminals.

The PDA-V100HD is provided with four HDMI inputs: Inputs 1, 3, 4, and 6.
Input 2 is for Y/Pb/Pr component signals, and Input 5 is for composite and S-VIDEO signals. Signal input to Input 3 can be switched between that from the HDMI and SCART terminals.
For details, refer to the operating instructions of the PDA-V100HD. The RS-232C port located on the rear panel is for service use.

When you use Input 4 of the G8 PDP *1 for connection, you can remotely control the PDA-V100HD with the remote control unit of the PDP if the Interlock setting of the HDMI control function is set to ON on the menu of the PDP and the HDMI Control switch located on the rear panel of the PDA-V100HD is set to ON.
If the PDA-V100HD is interlocked with the PDP, input selection and power on/off of the PDA-V100HD can be controlled with the remote control unit of the PDP. This HDMI control function is not available if input terminals other than Input 4 of the G8 PDP are being used or if an older PDP model is connected.

*1 : PDP-LX508D, 608D, 5080D, 6080D
PDP-428XD, 508XD, 4280XD, 5080XD,
PDP-4280XA, 5080XA,
PDP-SX4280D, SX5080D

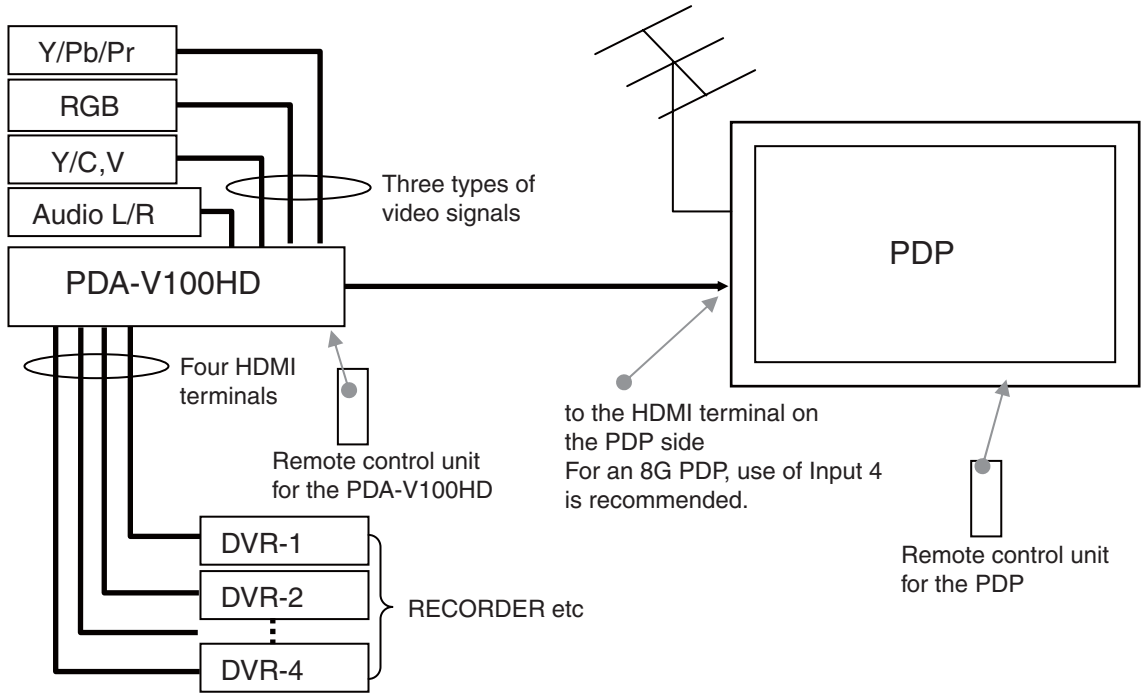


Fig. 1: Schematic of System Connections

2. Operation from Standby to Power-On

In Standby mode, +3.3 V and +5.1 V standby power is supplied from the POWER SUPPLY Unit of the PDA-V100HD, and only IC4005 (the IF microcomputer) is standing by waiting for remote control signal or key input. In Standby mode, the STNDBY indicator on the front panel (red LED) is lit.

If the Power switch on the front panel or the Power key on the remote control unit is pressed, IC4005 (the IF microcomputer) activates power supply by sending a command signal to IC4503 (the MAIN microcomputer), which in response outputs a relay signal to the POWER SUPPLY Unit to start it up.

Once the POWER SUPPLY Unit starts up and power is supplied to the circuitry, IC4503 (the MAIN microcomputer) sends the RST-ASIC command to IC3002, IC5001, IC5502, IC6601, and IC6901 to initialize them. Then the MAIN microcomputer starts communication with each IC, and it sends a command via the IF microcomputer to light the Power-ON indicator (blue LED) and the center LED (in blue).

The AC detection (AC_DET) function of the POWER SUPPLY Unit is for preventing the PDA-V100HD from malfunctioning when a momentary interruption of AC power is generated. Monitoring of the AC_DET signal is performed by both the IF and MAIN microcomputers.

3. LEDs on the Front Panel

On the front panel of the PDA-V100HD, there are the following LEDs: STANDBY indicator (red), Power-ON indicator (blue), INPUT indicators (red) for indicating the selected input function, and HDMI CONTROL indicator (green/orange) to indicate the CEC interlock state.

Upon receiving the RST_ASIC reset signal from the MAIN microcomputer, each IC is initialized, after which the selected INPUT indicator on the front panel is lit in response to commands from the MAIN microcomputer, via the IF microcomputer.

If you wish to CEC-interlock the PDA-V100HD with the G8 PDP*1, set the HDMI Control switch on the rear panel to ON.

*1 : PDP-LX508D, 608D, 5080D, 6080D
PDP-428XD, 508XD, 4280XD, 5080XD,
PDP-4280XA, 5080XA,
PDP-SX4280D, SX5080D

In this case, if the Interlock setting of the HDMI control function is set to ON on the PDP side, once interlocking of the PDA-V100HD with the PDP is established the HDMI CONTROL indicator on the front panel lights in green.

If the Interlock setting is set to OFF or if interlocking is not established, the HDMI CONTROL indicator lights in orange. If the HDMI Control switch is set to OFF, the HDMI CONTROL indicator does not light, as interlocking is not set.

4. Functions of Each IC

IC4005 (the IF microcomputer) monitors signals of key operations on the front panel or input signals received at tl IR remote control sensor and sends those signals to IC45 (the MAIN microcomputer).

Upon decoding signals of key operations on the front pane or input signals from the remote control unit, the MAIN microcomputer performs power on/off, input selection, anc operation management of each IC, as well as general management of the system as a whole, such as management of system errors, power monitoring, and detection of signal frequencies.

The MAIN microcomputer and other ICs take in sync signals, such as AD_VD and AD_HD, for signal processing and synchronized function switching.

IC6007 and IC6307 are for selecting HDMI inputs. The HDMI signals input to these ICs pass through IC6601 ther IC5502 (the digital selector) and are then output to the PD as HDMI digital signals from IC6901 (the transmitter).

IC6601 receives HDMI digital signals and performs HDCP authentication, after which the PDA-V100HD will accept th video and audio digital data output from the external devic if authentication was successful.

After being reset by IC4503 (the MAIN microcomputer), IC6901 (the transmitter) acquires extended digital interface data (EDID) from the EDID-ROM of the PDP, which is connected to the HDMI terminal of the PDA-V100HD.

The MAIN microcomputer sends such EDID obtained from the PDP to the external device connected via the HDMI input terminal of this converter.

Upon receiving the EDID, the external device outputs vide and audio digital data requested by the PDP as HDMI signals.
The MAIN microcomputer requests IC6901 (the transmitte to output HDMI digital signals.
If an external device is connected via HDMI terminals and the HDMI authentication process has been completed successfully, the LED corresponding to that input port will light. While HDMI authentication processing is in progress, the LED flashes.
Each time the HDMI inputs are switched, HDMI authentica tion processing is performed. Therefore, it takes about 6-1 seconds until an image is displayed on the PDP screen after HDMI inputs are switched. Adding to this delay, the time required for an image to be displayed on the PDP screen may vary, depending on the operation time require by the connected external device and authentication-processing errors.

The input video and audio composite and component signals pass through IC2003 or IC2501. Those signals are decoded then I/P-converted at IC3002, IC3501, or IC2001 then output from IC6901, via IC5502, as HDMI digital data. There are two paths to IC5502. With one path, composite/component signals are I/P-converted at IC5001 then sent to IC5502 (the digital selector). With another, composite/component signals are directly sent to IC5502, without I/P conversion, then output as HDMI digital data.

While decoding video signals, IC3002 uses IC3001 (SDRAM) as external memory for temporary data storage.

IC5002 (SDRAM) is external memory for IC3002 for scaling and I/P conversion.
IC4502 (FLASH) is used as memory storage for the program of IC4503 (the MAIN microcomputer) and for data current at the last update when the unit was turned off.

5. I/P Signal-Processing Route for Analog Input Signals

The HDMI output resolution settings for the PDA-V100HD are AUTO and Fixed modes (480p/576p, 720p, and 1080i).

For analog input signals that are input to INPUT 2, 3 (SCART), or 5, before being output as HDMI signals, some undergo I/P-conversion (via IC5001), and others do not undergo I/P-conversion, even if Fixed mode is selected, according to the resolution settings, as shown in Table 3.

In AUTO mode, signals do not undergo I/P-conversion regardless of the type of input signal, as shown in Table 3, and are sent to IC5502 (the digital selector) then output as HDMI digital data.

Table 3

Input Signal		AUTO Mode (signals are output without undergoing I/P conversion)	FIX Mode		
			480p/576p	720p	1080i
AVin/S-Video	NTSC	480i	480p	720p	1080i
	PAL	576i	576p	720p	1080i
	SECAM	576i	576p	720p	1080i
	4.43NTSC	576i	576p	720p	1080i
	PAL60	480i	480p	720p	1080i
RGB (SCART)		480i/576i	480p/576p	720p	1080i
Component	480i	480i	480p	720p	1080i
	480p	480p	Signals are output without undergoing I/P conversion, in 480p format.	720p	1080i
	576i	576i	576p	720p	1080i
	576p	576p	Signals are output without undergoing I/P conversion, in 576p format.	720p	1080i
	720p	720p	480p/576p	Signals are output without undergoing I/P conversion, in 720p format.	1080i
	1080i	1080i	480p/576p	720p	1080i

6. Playback of Analog Video Signals with a Large Quantity of Jitter Components

When an external device, such as a VCR, whose source signals contain a large quantity of jitter components is connected to the analog input of this unit, and playback is performed with the resolution set to AUTO, the signals are A/D converted with jitter components included and output. In such a case, as the output signals are unsynchronized, picture and sound may be interrupted.

In the above case, recommend that your client switch the resolution setting to 1080i. With this setting, as the analog signals will pass through IC5001 (to be I/P-converted and resized), and sync signals will be reproduced, which may remedy the picture and sound interruptions.

5.2 TROUBLE SHOOTING

5.2.1 VIDEO (INPUT 1)

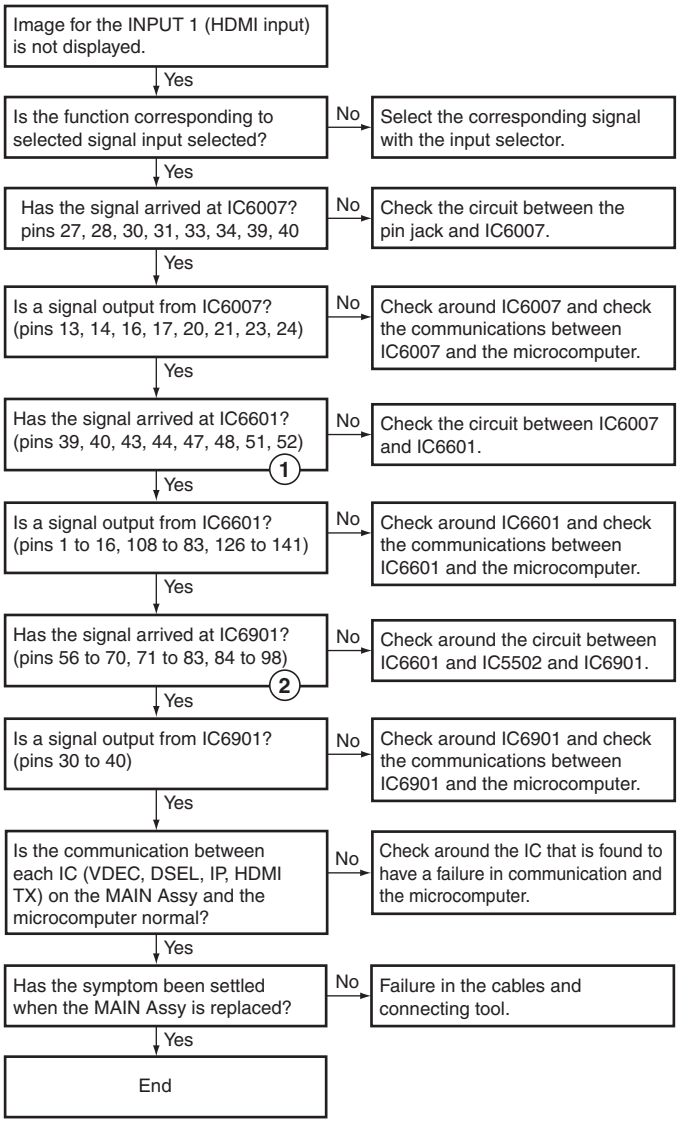
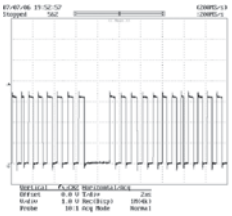
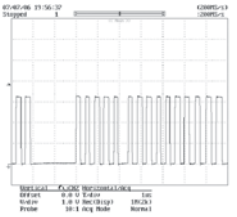


Image for the INPUT 1 (HDMI input) is not displayed.
Yes
Is the function corresponding to selected signal input selected?
No
Select the corresponding signal with the input selector.
Yes
Has the signal arrived at IC6007? pins 27, 28, 30, 31, 33, 34, 39, 40
No
Check the circuit between the pin jack and IC6007.
Yes
Is a signal output from IC6007? (pins 13, 14, 16, 17, 20, 21, 23, 24)
No
Check around IC6007 and check the communications between IC6007 and the microcomputer.
Yes
Has the signal arrived at IC6601? (pins 39, 40, 43, 44, 47, 48, 51, 52)
1
No
Check the circuit between IC6007 and IC6601.
Yes
Is a signal output from IC6601? (pins 1 to 16, 108 to 83, 126 to 141)
No
Check around IC6601 and check the communications between IC6601 and the microcomputer.
Yes
Has the signal arrived at IC6901? (pins 56 to 70, 71 to 83, 84 to 98)
2
No
Check around the circuit between IC6601 and IC5502 and IC6901.
Yes
Is a signal output from IC6901? (pins 30 to 40)
No
Check around IC6901 and check the communications between IC6901 and the microcomputer.
Yes
Is the communication between each IC (VDEC, DSEL, IP, HDMI TX) on the MAIN Assy and the microcomputer normal?
No
Check around the IC that is found to have a failure in communication and the microcomputer.
Yes
Has the symptom been settled when the MAIN Assy is replaced?
No
Failure in the cables and connecting tool.
Yes
End

● **Waveforms**

① **IC6601 - pin 39 etc.** V: 1 V/div H: 2 µS/div	② **IC6901 - pin 56 etc.** V: 1 V/div H: 1 µS/div
	

5.2.2 VIDEO (INPUT 2)

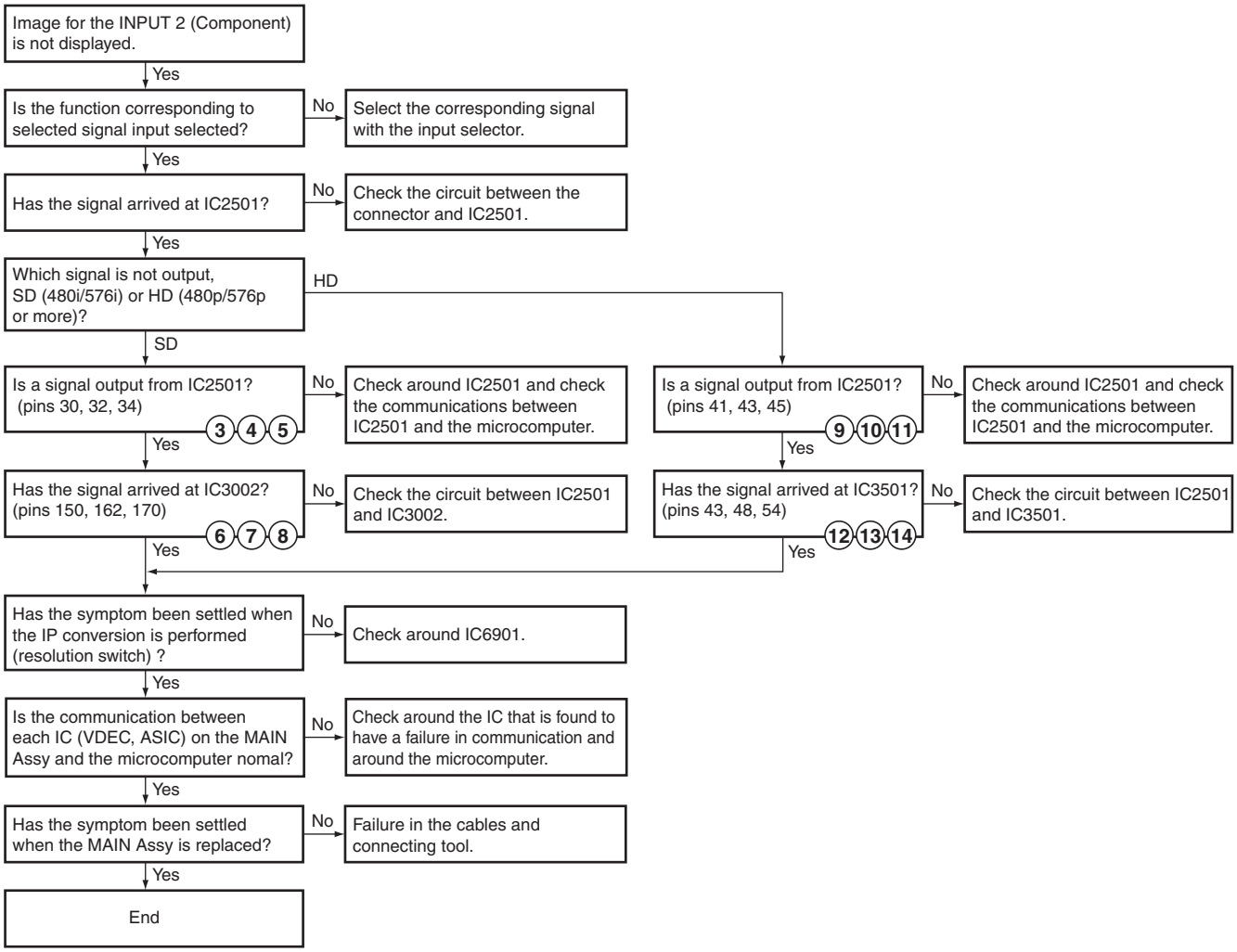


Image for the INPUT 2 (Component) is not displayed.
Yes
Is the function corresponding to selected signal input selected?
No
Select the corresponding signal with the input selector.
Yes
Has the signal arrived at IC2501?
No
Check the circuit between the connector and IC2501.
Yes
Which signal is not output, SD (480i/576i) or HD (480p/576p or more)?
HD
SD
Is a signal output from IC2501? (pins 30, 32, 34)
3 4 5
No
Check around IC2501 and check the communications between IC2501 and the microcomputer.
Yes
Has the signal arrived at IC3002? (pins 150, 162, 170)
6 7 8
No
Check the circuit between IC2501 and IC3002.
Yes
Is a signal output from IC2501? (pins 41, 43, 45)
9 10 11
No
Check around IC2501 and check the communications between IC2501 and the microcomputer.
Yes
Has the signal arrived at IC3501? (pins 43, 48, 54)
12 13 14
No
Check the circuit between IC2501 and IC3501.
Yes
Has the symptom been settled when the IP conversion is performed (resolution switch) ?
No
Check around IC6901.
Yes
Is the communication between each IC (VDEC, ASIC) on the MAIN Assy and the microcomputer nomal?
No
Check around the IC that is found to have a failure in communication and around the microcomputer.
Yes
Has the symptom been settled when the MAIN Assy is replaced?
No
Failure in the cables and connecting tool.
Yes
End

● **Waveforms**

③ **IC2501 - pin 30** V: 5 V/div H: 20 µS/div	④ **IC2501 - pin 32** V: 5 V/div H: 20 µS/div	⑤ **IC2501 - pin 34** V: 5 V/div H: 20 µsec/div	⑥ **IC3002 - pin 150** V: 5 V/div H: 10 µS/div
⑦ **IC3002 - pin 162** V: 5 V/div H: 10 µS/div	⑧ **IC3002 - pin 170** V: 5 V/div H: 10 µS/div	⑨ **IC2501 - pin 41** V: 2 V/div H: 20 µsec/div	⑩ **IC2501 - pin 43** V: 2 V/div H: 20 µS/div
⑪ **IC2501 - pin 45** V: 2 V/div H: 20 µS/div	⑫ **IC3501 - pin 43** V: 2 V/div H: 10 µS/div	⑬ **IC3501 - pin 48** V: 2 V/div H: 10 µsec/div	⑭ **IC3501 - pin 54** V: 2 V/div H: 10 µS/div

5.2.3 VIDEO (INPUT 3)

Image for the INPUT 3 (Composite, S input, RGB, HDMI) is not displayed.

Yes

Is the function corresponding to selected signal input selected? — No → Select the corresponding signal with the input selector.

Yes

Does it select the appropriate input with signal select (SCART switch)? — No → Select the appropriate input with signal select (SCART switch).

Yes

Composite, S input

Has the signal arrived at IC2003? (Composite: pin 72) (S input: pins 74, 77) (15) — No → Check the circuit between connector and IC2003.

Yes

Has the signal arrived at IC3002? (Composite: pin 148) (S input: pins 148, 158) (16) — No → Check the circuit between IC2003 and IC3002.

Yes

RGB

Has the signal arrived at IC2501? (pins 78, 80, 82) (17)(18)(19) — No → Check the circuit between connector and IC2501.

Yes

Has the signal arrived at IC3002? (pins 160, 164, 172) (20)(21)(22) — No → Check the circuit between IC2003 and IC3002.

Yes

Has the symptom been settled when the IP conversion is performed (resolution switch) ? — No → Check around IC6901.

Yes

Is the communication between each IC (VDEC, DSEL, IP, HDMI TX) on the MAIN Assy and the microcomputer nomal? — No → Check around the IC that is found to have a failure in communication and around the microcomputer.

Yes

Has the symptom been settled when the MAIN Assy is replaced? — No → Failure in the cables and connecting tool.

Yes

End

HDMI

Has the signal arrived at IC6007? — No → Check the circuit between pin jack and IC6007.

Yes

Is a signal output from IC6007? (pins 13, 14, 16, 17, 20 ,21, 23, 24) — No → Check around IC6007 and check the communications between IC6007 and the microcomputer.

Yes

Has the signal arrived at IC6601? (pins 39, 40, 43, 44, 47, 48, 51 ,52) — No → Check the circuit between IC6007 and IC6601.

Yes

Is a signal output from IC6601? (pins 1 to 16, 108 to 123, 126 to 141) — No → Check around IC6601 and check the communications between IC6601 and the microcomputer.

Yes

Has the signal arrived at IC6901? (pins 56 to 70, 71 to 83, 126 to 141) — No → Check around the circuit between IC6601 and IC5502 and IC6901.

Yes

Is a signal output from IC6901? (pins 30 to 40) — No → Check around IC6901 and check the communications between IC6901 and the microcomputer.

Yes

Is the communication between each IC (VDEC, DSEL, IP, HDMI TX) on the MAIN Assy and the microcomputer nomal? — No → Check around the IC that is found to have a failure in communication and around the microcomputer.

Yes

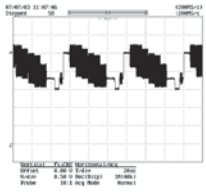
Has the symptom been settled when the MAIN Assy is replaced? — No → Failure in the cables and connecting tool.

Yes

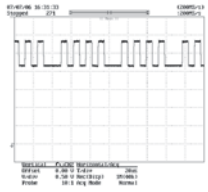
End

● Waveforms

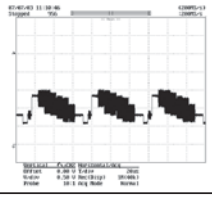
(15) IC2003 - pins 72, 74, 77
V: 0.5 V/div H: 20 µS/div
• Composite input



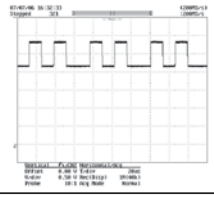
(18) IC2501 - pin 80
V: 0.5 V/div H: 20 µS/div



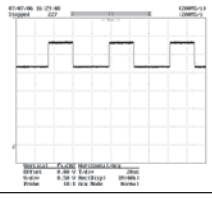
(16) IC3002 - pins 148, 158
V: 0.5 V/div H: 20 µS/div
• Composite input



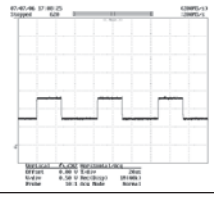
(19) IC2501 - pin 82
V: 0.5 V/div H: 20 µS/div



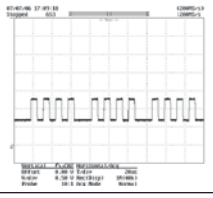
(17) IC2501 - pin 78
V: 0.5 V/div H: 20 µS/div



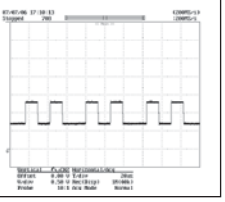
(20) IC3002 - pin 160
V: 0.5 V/div H: 20 µS/div



(21) IC3002 - pin 164
V: 0.5 V/div H: 20 µS/div



(22) IC3002 - pin 172
V: 0.5 V/div H: 20 µS/div



5.2.4 VIDEO (INPUT 4)

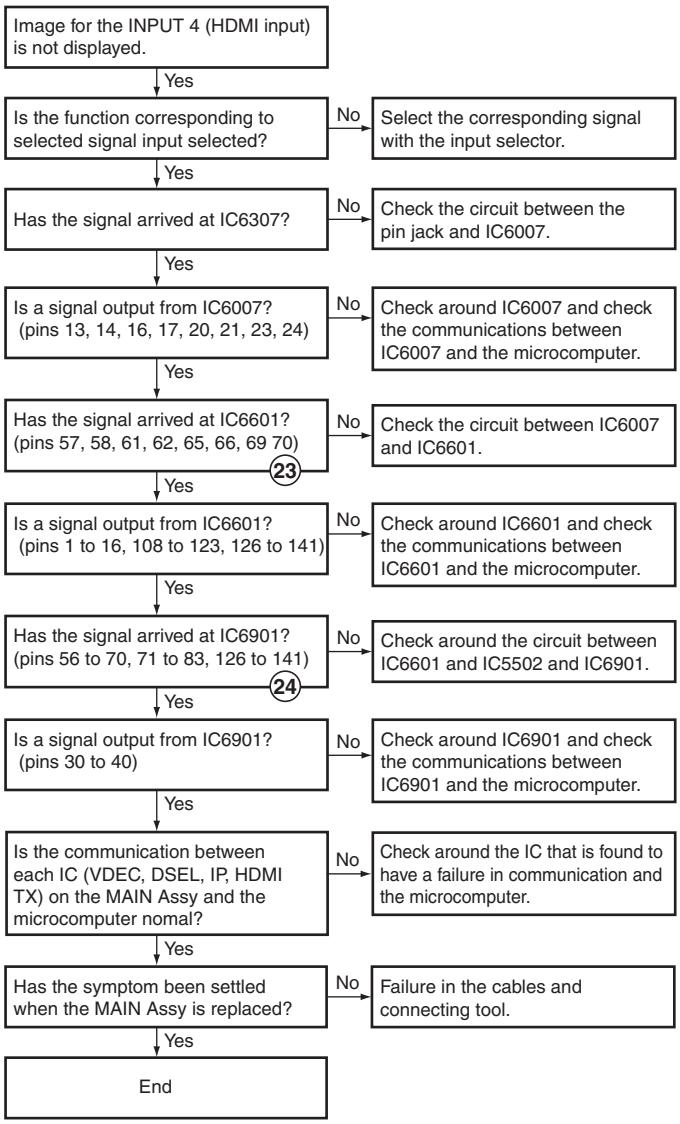
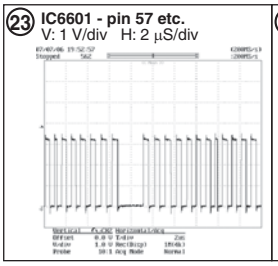


Image for the INPUT 4 (HDMI input) is not displayed.
Yes
Is the function corresponding to selected signal input selected?
No
Select the corresponding signal with the input selector.
Yes
Has the signal arrived at IC6307?
No
Check the circuit between the pin jack and IC6007.
Yes
Is a signal output from IC6007? (pins 13, 14, 16, 17, 20, 21, 23, 24)
No
Check around IC6007 and check the communications between IC6007 and the microcomputer.
Yes
Has the signal arrived at IC6601? (pins 57, 58, 61, 62, 65, 66, 69 70)
23
No
Check the circuit between IC6007 and IC6601.
Yes
Is a signal output from IC6601? (pins 1 to 16, 108 to 123, 126 to 141)
No
Check around IC6601 and check the communications between IC6601 and the microcomputer.
Yes
Has the signal arrived at IC6901? (pins 56 to 70, 71 to 83, 126 to 141)
24
No
Check around the circuit between IC6601 and IC5502 and IC6901.
Yes
Is a signal output from IC6901? (pins 30 to 40)
No
Check around IC6901 and check the communications between IC6901 and the microcomputer.
Yes
Is the communication between each IC (VDEC, DSEL, IP, HDMI TX) on the MAIN Assy and the microcomputer nomal?
No
Check around the IC that is found to have a failure in communication and the microcomputer.
Yes
Has the symptom been settled when the MAIN Assy is replaced?
No
Failure in the cables and connecting tool.
Yes
End

● **Waveforms**

23 IC6601 - pin 57 etc.
V: 1 V/div H: 2 µS/div



24 IC6901 - pin 56 etc.
V: 1 V/div H: 1 µS/div

5.2.5 VIDEO (INPUT 5)

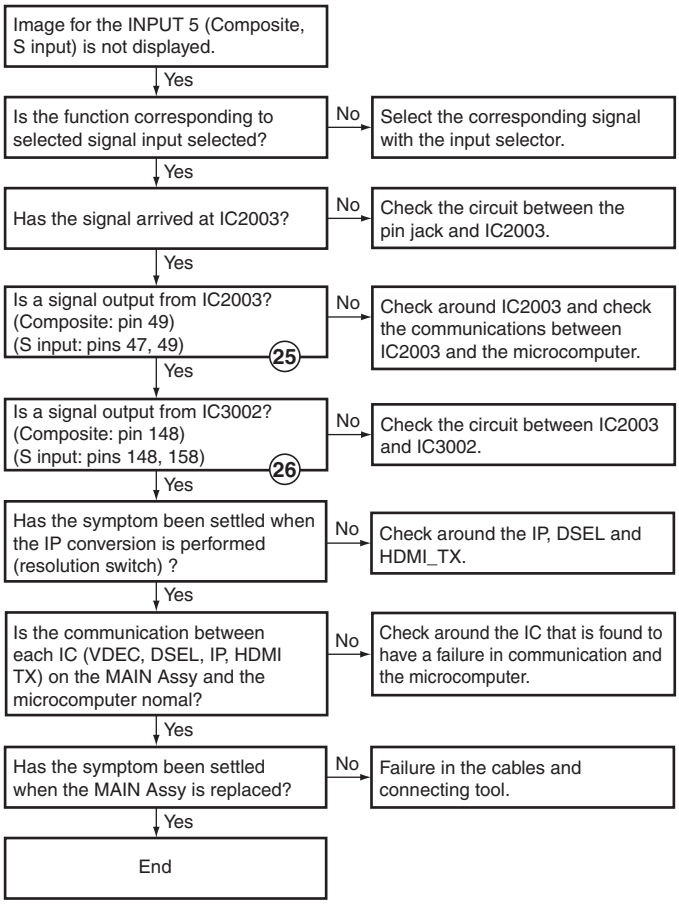
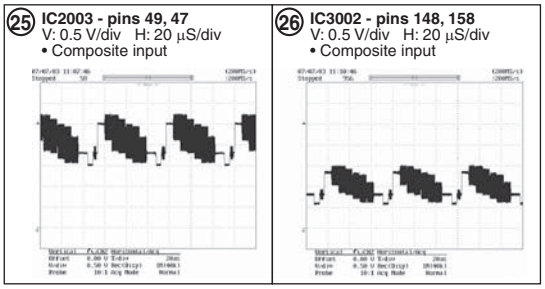


Image for the INPUT 5 (Composite, S input) is not displayed.
Yes
Is the function corresponding to selected signal input selected?
No
Select the corresponding signal with the input selector.
Yes
Has the signal arrived at IC2003?
No
Check the circuit between the pin jack and IC2003.
Yes
Is a signal output from IC2003? (Composite: pin 49) (S input: pins 47, 49)
25
No
Check around IC2003 and check the communications between IC2003 and the microcomputer.
Yes
Is a signal output from IC3002? (Composite: pin 148) (S input: pins 148, 158)
26
No
Check the circuit between IC2003 and IC3002.
Yes
Has the symptom been settled when the IP conversion is performed (resolution switch) ?
No
Check around the IP, DSEL and HDMI_TX.
Yes
Is the communication between each IC (VDEC, DSEL, IP, HDMI TX) on the MAIN Assy and the microcomputer nomal?
No
Check around the IC that is found to have a failure in communication and the microcomputer.
Yes
Has the symptom been settled when the MAIN Assy is replaced?
No
Failure in the cables and connecting tool.
Yes
End

● **Waveforms**



5.2.6 VIDEO (INPUT 6)

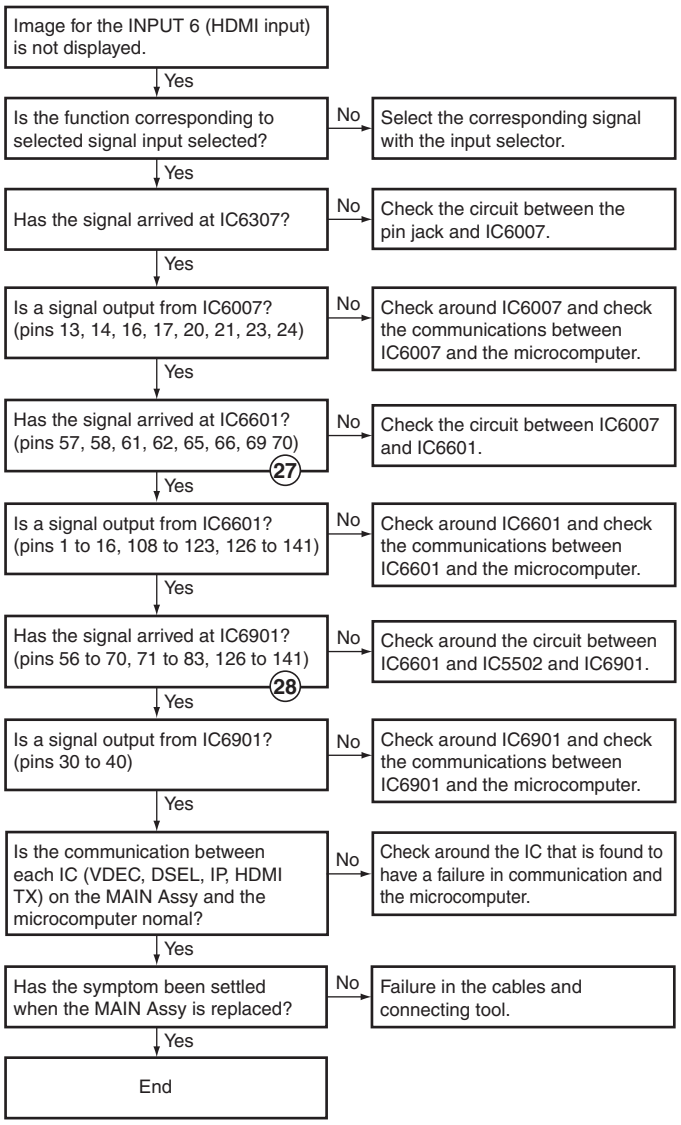
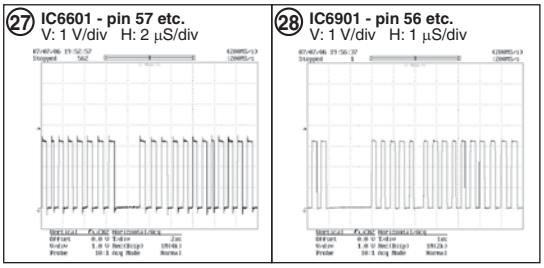
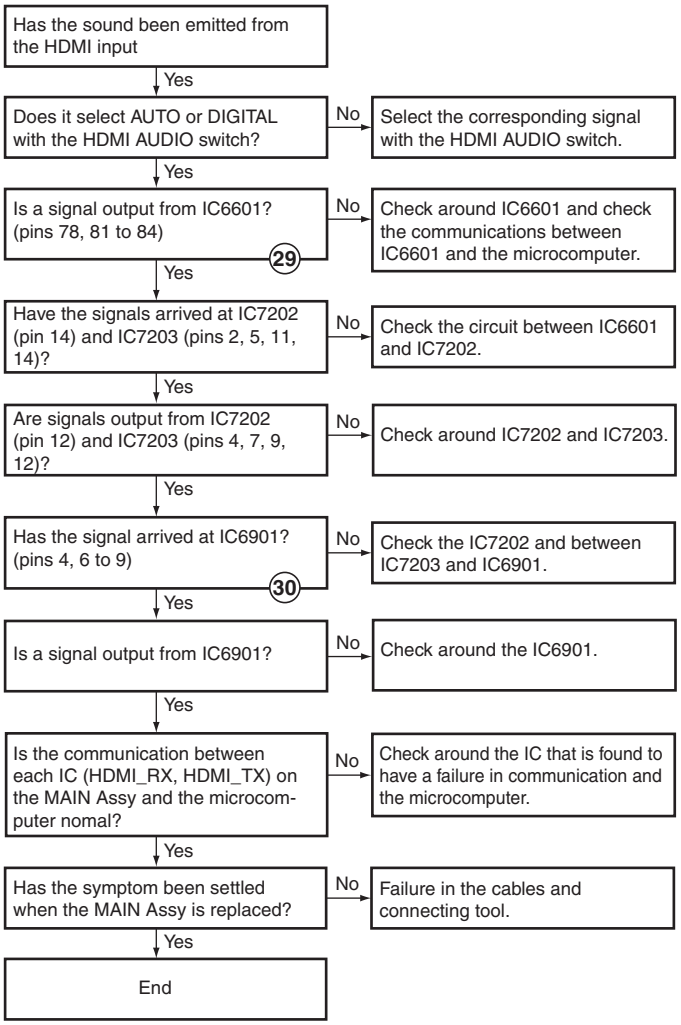


Image for the INPUT 6 (HDMI input) is not displayed.
Yes
Is the function corresponding to selected signal input selected?
No
Select the corresponding signal with the input selector.
Yes
Has the signal arrived at IC6307?
No
Check the circuit between the pin jack and IC6007.
Yes
Is a signal output from IC6007? (pins 13, 14, 16, 17, 20, 21, 23, 24)
No
Check around IC6007 and check the communications between IC6007 and the microcomputer.
Yes
Has the signal arrived at IC6601? (pins 57, 58, 61, 62, 65, 66, 69 70)
27
No
Check the circuit between IC6007 and IC6601.
Yes
Is a signal output from IC6601? (pins 1 to 16, 108 to 123, 126 to 141)
No
Check around IC6601 and check the communications between IC6601 and the microcomputer.
Yes
Has the signal arrived at IC6901? (pins 56 to 70, 71 to 83, 126 to 141)
28
No
Check around the circuit between IC6601 and IC5502 and IC6901.
Yes
Is a signal output from IC6901? (pins 30 to 40)
No
Check around IC6901 and check the communications between IC6901 and the microcomputer.
Yes
Is the communication between each IC (VDEC, DSEL, IP, HDMI TX) on the MAIN Assy and the microcomputer nomal?
No
Check around the IC that is found to have a failure in communication and the microcomputer.
Yes
Has the symptom been settled when the MAIN Assy is replaced?
No
Failure in the cables and connecting tool.
Yes
End

● **Waveforms**

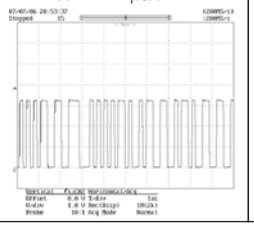


5.2.7 AUDIO (DIGITAL)

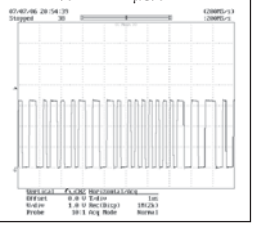

Has the sound been emitted from the HDMI input
Yes
Does it select AUTO or DIGITAL with the HDMI AUDIO switch?
No
Select the corresponding signal with the HDMI AUDIO switch.
Yes
Is a signal output from IC6601? (pins 78, 81 to 84)
29
No
Check around IC6601 and check the communications between IC6601 and the microcomputer.
Yes
Have the signals arrived at IC7202 (pin 14) and IC7203 (pins 2, 5, 11, 14)?
No
Check the circuit between IC6601 and IC7202.
Yes
Are signals output from IC7202 (pin 12) and IC7203 (pins 4, 7, 9, 12)?
No
Check around IC7202 and IC7203.
Yes
Has the signal arrived at IC6901? (pins 4, 6 to 9)
30
No
Check the IC7202 and between IC7203 and IC6901.
Yes
Is a signal output from IC6901?
No
Check around the IC6901.
Yes
Is the communication between each IC (HDMI_RX, HDMI_TX) on the MAIN Assy and the microcomputer nomal?
No
Check around the IC that is found to have a failure in communication and the microcomputer.
Yes
Has the symptom been settled when the MAIN Assy is replaced?
No
Failure in the cables and connecting tool.
Yes
End

● **Waveforms**

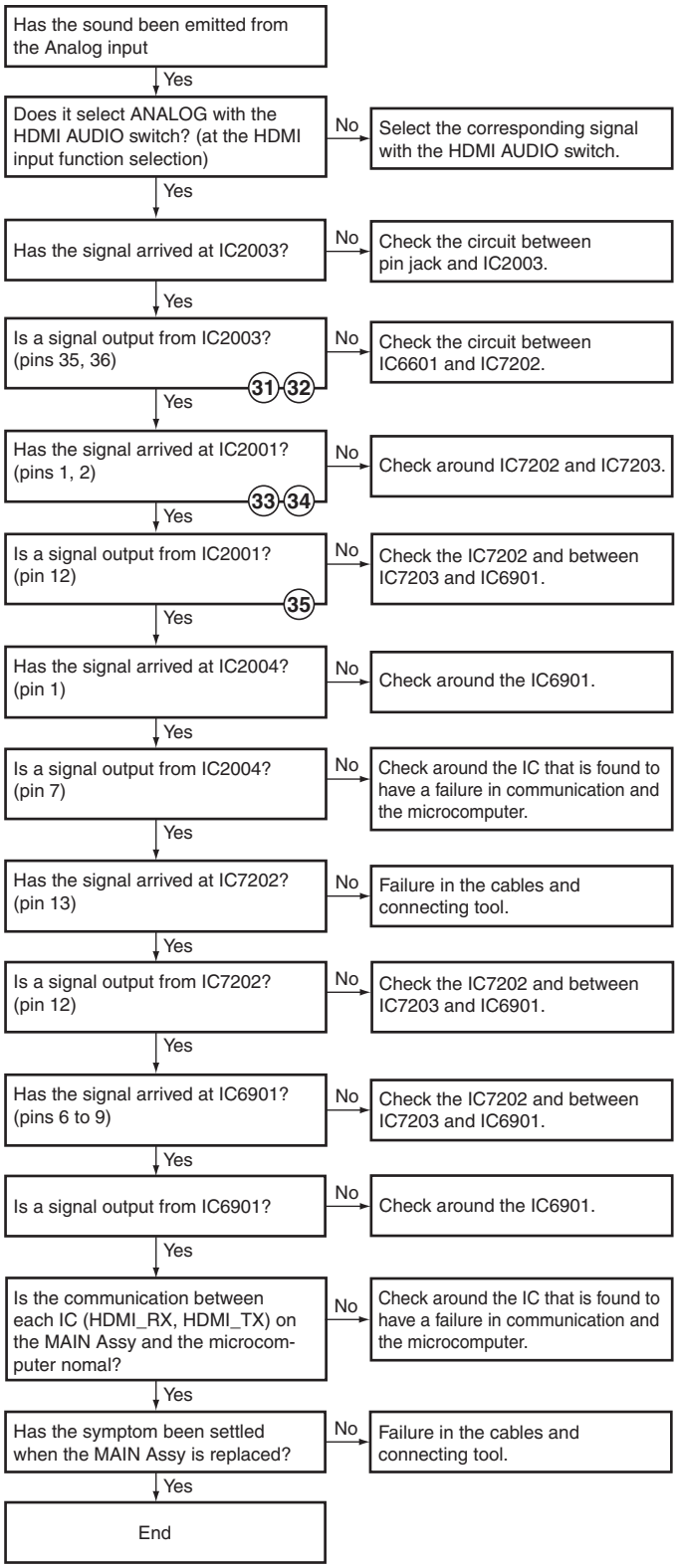
29 IC6601 - pin 78 etc.
V: 1 V/div H: 1 µS/div



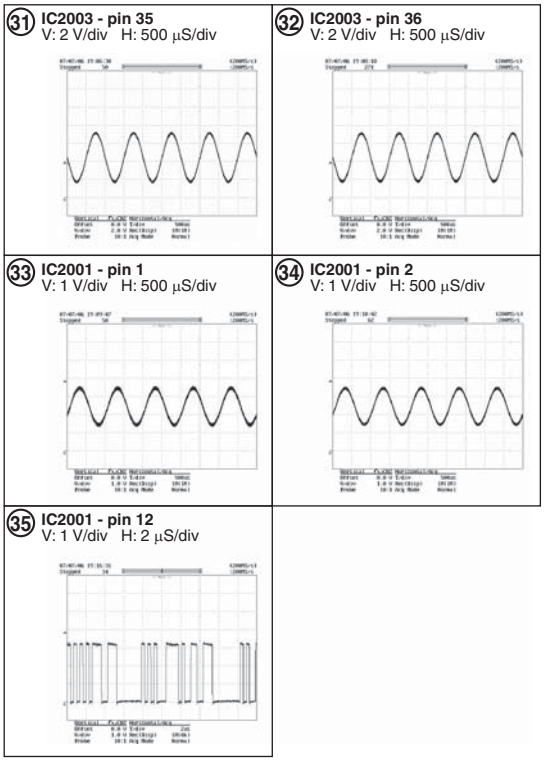
30 IC6901 - pin 4 etc.
V: 1 V/div H: 1 µS/div



5.2.8 AUDIO (ANALOG)


Has the sound been emitted from the Analog input
Yes
Does it select ANALOG with the HDMI AUDIO switch? (at the HDMI input function selection)
No
Select the corresponding signal with the HDMI AUDIO switch.
Yes
Has the signal arrived at IC2003?
No
Check the circuit between pin jack and IC2003.
Yes
Is a signal output from IC2003? (pins 35, 36)
31 32
No
Check the circuit between IC6601 and IC7202.
Yes
Has the signal arrived at IC2001? (pins 1, 2)
33 34
No
Check around IC7202 and IC7203.
Yes
Is a signal output from IC2001? (pin 12)
35
No
Check the IC7202 and between IC7203 and IC6901.
Yes
Has the signal arrived at IC2004? (pin 1)
No
Check around the IC6901.
Yes
Is a signal output from IC2004? (pin 7)
No
Check around the IC that is found to have a failure in communication and the microcomputer.
Yes
Has the signal arrived at IC7202? (pin 13)
No
Failure in the cables and connecting tool.
Yes
Is a signal output from IC7202? (pin 12)
No
Check the IC7202 and between IC7203 and IC6901.
Yes
Has the signal arrived at IC6901? (pins 6 to 9)
No
Check the IC7202 and between IC7203 and IC6901.
Yes
Is a signal output from IC6901?
No
Check around the IC6901.
Yes
Is the communication between each IC (HDMI_RX, HDMI_TX) on the MAIN Assy and the microcomputer nomal?
No
Check around the IC that is found to have a failure in communication and the microcomputer.
Yes
Has the symptom been settled when the MAIN Assy is replaced?
No
Failure in the cables and connecting tool.
Yes
End

● **Waveforms**


31 IC2003 - pin 35
V: 2 V/div H: 500 µS/div
32 IC2003 - pin 36
V: 2 V/div H: 500 µS/div
33 IC2001 - pin 1
V: 1 V/div H: 500 µS/div
34 IC2001 - pin 2
V: 1 V/div H: 500 µS/div
35 IC2001 - pin 12
V: 1 V/div H: 2 µS/div

6. SERVICE FACTORY MODE

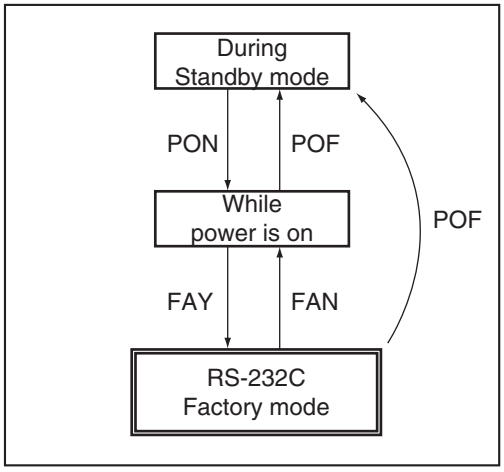
6.1 FACTORY MODE

6.1.1 OVERVIEW

1. Overview

Factory mode is a hidden function and provided for confirmation of various operations of the product during TP or at shipment (not for general users).
Factory mode is also provided for adjustment functions and status-confirmation functions for servicing (including for technical examinations).
You can enter Factory mode with special commands, using RS-232C communications.

2. Status Shift Diagram



3. How to Enter or Exit Factory Mode

You can enter Factory mode only by sending the "FAY" RS-232C command while power is on.
During Factory mode, the ICE POWER indication flashes.
To exit Factory mode, send the "FAN" command, turn off the unit, or unplug the AC cord.

4. About RS-232C Commands

- Regardless of the ID setting, etc., an echo back is always sent (as soon as the unit is ready to receive the next command).
- The QUEST command is always valid (during normal operation, if ID is "--", commands related to QUEST will be ignored).
- Any ID will be treated as valid regardless of the user setting.

5. Limitations

- Any on-screen display will not be indicated.
- Data on the status of a function upon the last update will be stored in memory unless otherwise stated.
- During Factory mode, even if the unit is CEC-interlocked with the PDP, only input switching of Input 6 is enabled with the remote control unit of the HD AV Converter or with the RS-232C commands.
- If the unit is interlocked with the PDP, even after the input to Input 6 is switched by the HD AV Converter, input can be switched with the remote control unit of the PDP.
- The baud rate for the HD AV Converter is fixed at 9600 bps.
- Basically, the RS-232C commands also have G8 command names whenever possible.
- Although input to Input 5 basically functions in Auto mode, forced assignment of CVBS/YC is possible with the SIP command. However, be sure to return the mode to Auto mode after exiting Factory mode, because data on the last status before input switching are not stored in memory.
- Automatic switching by detecting fast blanking will function the same as in Normal mode without any limitation.

6. Remote Control Codes and Corresponding RS-232C Command Codes in Factory Mode

SR Function	Remote Control Code	Main Functions	Corresponding RS-232C Command Code
INPUT1	A3C1 + AFA9	Input switching	INPS01
INPUT2	A3C1 + AFAA		INPS02
INPUT3	A3C1 + AFAB		INPS03
INPUT4	A3C1 + AFAC		INPS04
INPUT5	A3C1 + AFAD		INPS05
INPUT6	A3C1 + AFAE		INPS06
POWER OFF/ON	A3C1 + AFA2	Power off	POF
POWER OFF	A3C1 + AFA1		
AUDIO	A3C1 + AFA6	Audio selection	AHIS**
VIDEO	A3C1 + AFA3	Colour format switching	CLFS**
COLOUR SYSTEM	A3C1 + AFA4	Colour system switching	CLSS**
RESOLUTION	A3C1 + AFA7	Output resolution switching	RSOS**
SIGNAL SELECT	A3C1 + AFA5	Signal switching	SIPS**

* With the remote control unit of the PDP, the INPUT key functions as a signal-selection key when multiple signals are input to the same input. However, because the dedicated SIGNAL SELECT key is provided with the HD AV Converter, such function is not provided with the HD AV Converter.

Processes When an Abnormality is Generated

Major category	Subcategory	Detailed category	Operation	Reset	Detection	LED operation	
						HD AV Converter	
						STB	ON
SD	Main microcomputer 3-wire serial communication	IF microcomputer	Immediate SD	Reset IC	No response to a command		Blue 1
	Main microcomputer IIC communication	AV Switch	Immediate SD	No resetting	During communication		Blue 2
		RGB Switch	Immediate SD	No resetting	During communication		
		VDEC	Immediate SD	RST ASIC	During communication		Blue 3
		AD / PLL	Immediate SD	No resetting	During communication		
		HDMI Tx	Immediate SD	RST ASIC	During communication		Blue 4
		HDMI Rx	Immediate SD	RST ASIC	During communication		Blue 5
		EDID 1	*1	(RST ASIC)	During communication		Blue 6
		EDID 2	*1	(RST ASIC)	During communication		
		EDID 3	*1	(RST ASIC)	During communication		
		EDID 4	*1	(RST ASIC)	During communication		
		I/P	Immediate SD	RST ASIC	During communication		Blue 7
		64k EEPROM	Immediate SD	EP RST	During communication		Blue 8
	Main microcomputer communication & unknown	–	Immediate SD	No resetting	No response to a request from the IF microcomputer or the part that blocks communication identified		Blue 9
	D-SEL CONFIG	–	Immediate SD	RST DSEL	During communication (only during startup)		Blue 10
	Power supply	DC-DC Converter power decrease	Immediate SD	No resetting	RST2		Blue 11
		HDMI Tx OCP (**O**ver **C**urrent **P**rotection)	Immediate SD	No resetting	RST4		
		Power to small boards	Immediate SD	No resetting	RST6		
PD			PD	No resetting	RST1-4		

*1 When the EDID transmission shuts off, the log is recorded, and the LED flashes, but the power will not be turned off.

Even if power is turned off by a shutdown, the main microcomputer still functions.
A power-down will be executed when all of RST1 to RST4 are high. Upon power-down, power to all parts is shut off, and control of the LEDs and memory is disabled. Therefore, no process will be performed by software for a power-down (such a power-down is indicated by all LEDs' going dark).

6.1.2 LIST OF COMMANDE

A

List of Commands

No.	Command Name	Range of Auxiliary Command	Function	During Normal On	During Standby	During Factory Mode	Home Amenity
1	AHI	S01 to S03	To switch the HDMI AUDIO settings	○	×	○	○
2	INP	S01 to S06	To switch inputs of the HD AV Converter	○	×	○	○
3	SIP	S00 to	To switch connectors for the input signal currently producing picture/sound	○	×	○	○
4	CLS	S01 to S05, S08	To switch colour systems for the analog signal currently producing picture/sound	○	×	○	○
5	RSO	S00 to S03	To switch output resolution settings for the analog signal currently watching/listening to	○	×	○	○
6	CLF	S00 to S04	To switch colour formats for the analog signal currently watching/listening to	○	×	○	○
7	PON	–	To turn on the power of the HD AV Converter	×	○	×	○
8	POF	–	To set the power of the HD AV Converter to Standby	○	×	○	○
9	FAY	–	To enter Factory mode	○	×	×	×
10	FAN	–	To exit Factory mode	×	×	○	×
13	QS1	–	To obtain data on the version of each microcomputer	○	○	○	×
14	QNG	–	To obtain data on factors for abnormality	○	○	○	×
15	CNG	–	To clear data on factors for abnormality	×	×	○	×
16	QHM	–	To obtain data of the Hour Meter of the HD AV Converter	○	○	○	×
17	CHM	–	To clear data of the Hour Meter of the HD AV Converter	×	×	○	×
18	QRX	–	To obtain data of HDMI Rx SIGNAL INFO	○	×	○	×
19	QTX	–	To obtain data of HDMI Tx SIGNAL INFO	○	×	○	×
23	FST	–	To return the User Setting items and EDID data to default	×	×	○	×
24	QIS	–	To obtain input signal data of the HD AV Converter	○	×	○	×
25	QOS	–	To obtain output signal data of the HD AV Converter	○	×	○	×

B

C

D

E

F

6.1.3 AHI, INP

AHI

Command Name	AHI			Auxiliary Command	Yes: S**	
Conditions for Operation Modes	During Normal mode (normal on)	○	During Standby	×	During Factory mode	○
Function	To select which one is to be output for the input connectors to which both analog and digital audio signals can be input. To correspond to home amenity.					

Specifications of Command	Send/receive Data	Size (byte)	Parameter	Description on Operation
Sending to the main microcomputer	Command	3	AHI	To switch to the setting that is specified by an auxiliary command. If there is no assignment, the current setting is sent back.
	Auxiliary command	3	S01	To set the HDMI audio output setting to Auto
			S02	To set the HDMI audio output setting to Digital fix
			S03	To set the HDMI audio output setting to Analog fix
Receiving from the main microcomputer	Command	3	AHI	
	Auxiliary command	3	S**	Any of S01-S03 that was sent will be returned. **Note:** If the command is sent without an auxiliary command, the current setting will be returned.

Remarks:
Switching is possible only with Inputs 1, 3, and 4, with which both analog and digital inputs are possible. Switching is not possible with other inputs, and with those inputs, the input setting is "Auto fixed."
LED control accompanied by switching is the same as when switching is performed with the remote control unit. See "Specifications of Key Operations."

INP

Command Name	INP			Auxiliary Command	Yes: S**	
Conditions for Operation Modes	During Normal mode (normal on)	○	During Standby	×	During Factory mode	○
Function	To select an input from among INPUTs 1-6 of the HD AV Converter This function works the same as SWBOX switching with the aid of the dedicated remote control unit and corresponding CEC operations.					

Specifications of Command	Send/receive Data	Size (byte)	Parameter	Description on Operation
Sending to the main microcomputer	Command	3	INP	To switch to the setting that is specified by an auxiliary command. If there is no assignment, the current setting is sent back.
	Auxiliary command	3	S01	To set the input setting of HD AV Converter to INPUT1
			S02	To set the input setting of HD AV Converter to INPUT2
			S03	To set the input setting of HD AV Converter to INPUT3
			S04	To set the input setting of HD AV Converter to INPUT4
			S05	To set the input setting of HD AV Converter to INPUT5
			S06	To set the input setting of HD AV Converter to INPUT6
Receiving from the main microcomputer	Command	3	INP	
	Auxiliary command	3	S**	Any of S01-S06 that was sent will be returned. **Note:** If the command is sent without an auxiliary command, the current setting will be returned.

Remarks:
Input switching is impossible while this unit is CEC-interlocked with Pioneer's PDP. However, if the number of inputs to the interlocked PDP is less than 6, switching of only Input 6 is possible.
LED control accompanied by switching is the same as when switching is performed with the remote control unit. See "Specifications of Key Operations."

• About switching to Input 6 during Factory mode
When the PDP is interlocked with this unit, if the number of inputs to the Sink side is less than 6 and if the input producing picture/sound is Input 4, switching of Input 6 with this command is possible.
In such a case, the VSC nor CEC commands are never sent.
Note: Only switching of paths inside the HD AV Converter can be performed.
The PDP continues to operate with the Input-4 signal, and only the input to the HD AV Converter is switched to Input 6. To restore the original status, it is necessary to switch the input to the PDP to one other than Input 4, using the remote control unit.

6.1.4 SIP, CLS

SIP

Command Name	SIP			Auxiliary Command	Yes: S**	
Conditions for Operation Modes	During Normal mode (normal on)	○	During Standby	×	During Factory mode	○
Function	To switch input signals. To switch signals of the same input connector					

Specifications of Command	Send/receive Data	Size (byte)	Parameter	Description on Operation
Sending to the main microcomputer	Command	3	SIP	To switch to the setting that is specified by an auxiliary command. If there is no assignment, the current setting is sent back.
	Auxiliary command	3	S00	To return to the initial setting (the initial setting differs depending on the input)
			S01	To switch to CVBS
			S02	To switch to YC
			S04	To switch to RGB
			S05	To switch to HDMI
Receiving from the main microcomputer	Command	3	SIP	
	Auxiliary command	3	S**	Any of S00-S02, S04, or S05 that was sent will be returned. **Note:** If the command is sent without an auxiliary command, the current setting will be returned.

Remarks:
This command is only valid for Input 3 during Normal mode. In Factory mode, however, switching of signals of Input 5 between CVBS and YC is also required, although it is automatically switched in Normal mode. As this command is for an input with multiple input connectors, it is valid only for Input 3 and Input 5 (only in Factory mode). For other inputs, this command is invalid.
LED control accompanied by switching is the same as when switching is performed with the remote control unit. See "Specifications of Key Operations."

When SIP S00 is sent while a signal is input to Input 5, the setting becomes auto, and all the input LEDs 1-6 will flash for 3 seconds at intervals of 500 ms. After switching is completed, the input LEDs will indicate the current input status.

Command Sent	INPUT (RED LED)					
	1	2	3	4	5	6
SIPS00 (Input5)	●	●	●	●	●	●

CLS

Command Name	CLS			Auxiliary Command	Yes: S**	
Conditions for Operation Modes	During Normal mode (normal on)	○	During Standby	×	During Factory mode	○
Function	To switch the colour system for the analog input signals					

Specifications of Command	Send/receive Data	Size (byte)	Parameter	Description on Operation
Sending to the main microcomputer	Command	3	CLS	To switch to the setting that is specified by an auxiliary command. If there is no assignment, the current setting is sent back.
	Auxiliary command	3	S01	To set the color system of the analog input setting to Auto
			S02	To set the color system of the analog input setting to PAL
			S03	To set the color system of the analog input setting to SECAM
			S04	To set the color system of the analog input setting to NTSC
			S05	To set the color system of the analog input setting to 4.43NTSC
			S08	To set the color system of the analog input setting to PAL60
Receiving from the main microcomputer	Command	3	CLS	
	Auxiliary command	3	S**	Any of S01-S05 or S08 that was sent will be returned. **Note:** If the command is sent without an auxiliary command, the current setting will be returned.

Remarks:
This command is valid only when the input signal is analog.
Note: Input 2 (component) and Input 3 (Scart RGB) are not selectable, because the colour system setting is disabled for those inputs.
LED control accompanied by switching is the same as when switching is performed with the remote control unit. See "Specifications of Key Operations."

6.1.5 RSO, CLF

RSO

Command Name	RSO			Auxiliary Command	Yes: S**	
Conditions for Operation Modes	During Normal mode (normal on)	○	During Standby	×	During Factory mode	○
Function	To set the output resolution for the analog inputs. The digital input signals are through-output.					

Specifications of Command	Send/receive Data	Size (byte)	Parameter	Description on Operation
Sending to the main microcomputer	Command	3	RSO	To switch to the setting that is specified by an auxiliary command. If there is no assignment, the current setting is sent back.
	Auxiliary command	3	S00	To set the output resolution setting to through
			S01	To set the output resolution setting to 480P/576P
			S02	To set the output resolution setting to 720P
			S03	To set the output resolution setting to 1080i
Receiving from the main microcomputer	Command	3	RSO	
	Auxiliary command	3	S**	Any of S00-S03 that was sent will be returned. **Note:** If the command is sent without an auxiliary command, the current setting will be returned.

Remarks:
As the output resolution is only controllable for analog input signals, this command is valid only for Input 2, Input 3 (SCART), and Input 5.
LED control accompanied by switching is the same as when switching is performed with the remote control unit. See "Specifications of Key Operations."
Analog input 1080p@24 is not supported.

CLF

Command Name	CLF			Auxiliary Command	Yes: S**	
Conditions for Operation Modes	During Normal mode (normal on)	○	During Standby	×	During Factory mode	○
Function	To set the colour format for analog input					

Specifications of Command	Send/receive Data	Size (byte)	Parameter	Description on Operation
Sending to the main microcomputer	Command	3	CLF	To switch to the setting that is specified by an auxiliary command. If there is no assignment, the current setting is sent back.
	Auxiliary command	3	S00	To set the colour format setting to Auto
			S01	To set the colour format setting to Colour-1
			S02	To set the colour format setting to Colour-2
			S03	To set the colour format setting to Colour-3
			S04	To set the colour format setting to Colour-4
Receiving from the main microcomputer	Command	3	CLF	
	Auxiliary command	3	S**	Any of S00-S04 that was sent will be returned. **Note:** If the command is sent without an auxiliary command, the current setting will be returned.

Remarks:
The setting is possible only for analog input.
LED control accompanied by switching is the same as when switching is performed with the remote control unit. See "Specifications of Key Operations."

6.1.6 PON, POF

PON

Command Name	PON			Auxiliary Command	None	
Conditions for Operation Modes	During Normal mode (normal on)	×	During Standby	○	During Factory mode	×
Function	To turn the HD AV Converter on					

Specifications of Command	Send/receive Data	Size (byte)	Parameter	Description on Operation
Sending to the main microcomputer	Command	3	PON	To turn the HD AV Converter on **Note:** This command is valid only for the HD AV Converter.
Receiving from the main microcomputer	Command	3	PON	

Remarks:
LED control when this command is executed is the same as when the command is executed with the remote control unit. See "Specifications of Key Operations."

POF

Command Name	POF			Auxiliary Command	None	
Conditions for Operation Modes	During Normal mode (normal on)	○	During Standby	×	During Factory mode	○
Function	To set the power to the HD AV Converter to Standby					

Specifications of Command	Send/receive Data	Size (byte)	Parameter	Description on Operation
Sending to the main microcomputer	Command	3	POF	To set the power to the HD AV Converter to Standby **Note:** This command is valid only for the HD AV Converter.
Receiving from the main microcomputer	Command	3	POF	

Remarks:
LED control when this command is executed is the same as when the command is executed with the remote control unit. See "Specifications of Key Operations."

6.1.7 FAY, FAN and FST

FAY

Command Name	FAY			Auxiliary Command	None	
Conditions for Operation Modes	During Normal mode (normal on)	○	During Standby	×	During Factory mode	×
Function	To enter Factory mode					

Specifications of Command	Send/receive Data	Size (byte)	Parameter	Description on Operation
Sending to the main microcomputer	Command	3	FAY	To enter Factory mode **Note:** This command is valid only for the HD AV Converter.
Receiving from the main microcomputer	Command	3	FAY	

Remarks:
After Factory mode is entered, the ICE POWER indication flashes.

FAN

Command Name	FAN			Auxiliary Command	None	
Conditions for Operation Modes	During Normal mode (normal on)	×	During Standby	×	During Factory mode	○
Function	To exit from Factory mode					

Specifications of Command	Send/receive Data	Size (byte)	Parameter	Description on Operation
Sending to the main microcomputer	Command	3	FAN	To exit from Factory mode **Note:** This command is valid only for the HD AV Converter.
Receiving from the main microcomputer	Command	3	FAN	

Remarks:
After Factory mode is exited, the ICE POWER indication stops flashing and returns to normal lighting status.
If the signal to Input 5 is forcibly set to either CVBS or YC with the SIPS** command during Factory mode, return the setting to Auto.

FST

Command Name	FST			Auxiliary Command	None	
Conditions for Operation Modes	During Normal mode (normal on)	×	During Standby	×	During Factory mode	○
Function	To reset the user settings to default					

Specifications of Command	Send/receive Data	Size (byte)	Parameter	Description on Operation
Sending to the main microcomputer	Command	3	FST	To reset the user settings to default **Note:** This command is valid only for the HD AV Converter.
Receiving from the main microcomputer	Command	3	FST	After processing is completed, FST will be returned.

Remarks:
This command is used to initialize user setting data and all ROM data for the EDID.
After the final setup processing is completed, all the input LEDs will light. After this command is executed, any operation of the unit is disabled in order to prevent data in the EEPROM from being rewritten (operations other than AC OFF are disabled). (Any operation with the remote control unit is disabled, and no command is accepted.)

6.1.8 QS1

QS1

Command Name	QS1			Auxiliary Command	None	
Conditions for Operation Modes	During Normal mode (normal on)	○	During Standby	○	During Factory mode	○
Function	To obtain version information when the versions for software and hardware for the HD AV Converter do not match					

Specifications of Command	Send/receive Data	Size (byte)	Parameter	Description on Operation
Sending to the main microcomputer	Command	3	QS1	To obtain data on the software version **Note:** This command is valid only for the HD AV Converter.
Receiving from the main microcomputer	Command	3	QS1	
	IF Prog Version	4	***E	Version of the IF microcomputer program
	IF Boot Version	4	_**E	Version of the boot program for the IF microcomputer
	Main Prog Version	8	***E****	Version of the Main microcomputer program
	Main Boot Version	4	_**E	Version of the boot program for the Main microcomputer
	Interlocked status of the CEC	1	*	To return CEC Interlock mode
	Data on the maximum number of inputs	1	*	To indicate the maximum number of inputs to Pioneer's PDP being connected
	Check Sum	2	**	

Remarks:
[How to read the version numbers]

• Program version

* * * * * * * *
1 2 3 4 5 6 7 8
1: Date of test production
2: Version for test production (upper)
3: Version for test production (lower)
4: Destination code (for the HD AV Converter, it is fixed at E)
5: Code for the local version (only for the main microcomputer)
6: Local version (only for the main microcomputer)
7: Spare (only for the main microcomputer)
8: Spare (only for the main microcomputer)

• Version of the boot program

* * * *
1 2 3 4
1: Blank
2: Version for test production (upper)
3: Version for test production (lower)
4: Destination code (for the HD AV Converter, it is fixed at E)

Note: For the version of the boot program, the code for test-production date is not added and is left blank.

• Date of test production
0 - 3: Completion test =:TP -: PP and later

• Version for test production
The version number starts from 01 and is incremented by 1 (01, 02..., 99).

• When releasing the local version
When releasing the local version, !* is suffixed after the formal version number (in order to distinguish that the version is not formal). The local version number starts from 1, and incremented by 1 (1..., 9, A... Z).
E.g.: The first local version of 001E for the completion test is "001E!1."
To clarify the base version for the local version, make sure that the formal version is properly described.

[CEC-interlocked status]
0: CEC Independent 2 mode
(The setting of the HDMI Control switch on the HD AV Converter is OFF.)
1: CEC Independent 1 mode
(The setting of the HDMI Control switch on the HD AV Converter is ON, and the setting of Pioneer's PDP is "no connection" or the interlock setting is off.)
2: PDP Interlock mode:
(The setting of the HDMI Control switch on the HD AV Converter is ON, Pioneer's PDP is connected, and the interlock setting is on.)

[Data on the maximum number of inputs]
These parameters are obtained from the PDP when the HD AV Converter is CEC-interlocked with Pioneer's PDP. Data on the interlocked PDP's inputs are obtained (as the G8 model PDP has only 5 inputs).

6.1.9 QIS

QIS

Command Name	QIS			Auxiliary Command	None	
Conditions for Operation Modes	During Normal mode (normal on)	○	During Standby	×	During Factory mode	○
Function	To obtain data on the input-signal status of the HD AV Converter					

Specifications of Command	Send/receive Data	Size (byte)	Parameter	Description on Operation
Sending to the main microcomputer	Command	3	QIS	To obtain data on the input-signal status of the HD AV Converter **Note:** This command is valid only for the HD AV Converter.
Receiving from the main microcomputer	Command	3	QIS	
	Input function	3	AV*	"*" represents the number of the currently selected Input (1-6).
	Signal mode information	4	****	For details, see the table below.
	Colour system information	3	***	For details, see the table below.
	Check Sum	2	**	

[Signal Mode]

SIG-Table	1st and 2nd	3rd and 4th	Signal Type
VIDEO	10	50	SDTV*625i
	20		SDTV*625P
	30		HDTV*1125i
	40		HDTV*750p
	10	60	SDTV*525i
	12		DTV*525i (PAL60)
	20		SDTV*525p
	30		HDTV*1125i
	40		HDTV*750p
	50	24	HDTV*1125p
Signal not supported	??	??	Out Of Range
No signal	_	_	No Signal
PC	PC	_	PC

[Colour system]

Return for a command	Type of input signal	Colour system
NTV	Composite	NTSC
PLV		PAL
SCV		SECAM
4NV		4.43NTSC
P6V		PAL60
BWV		BLACK/WHITE
NTS	S-Video	NTSC
PLS		PAL
SCS		SECAM
4NS		4.43NTSC
P6S		PAL60
BWS		BLACK/WHITE
CBR	Y Cb Cr	
RGB	RGB	
DIG	Digital	

6.1.10 QOS

QOS

Command Name	QOS			Auxiliary Command	None	
Conditions for Operation Modes	During Normal mode (normal on)	○	During Standby	×	During Factory mode	○
Function	To obtain data on the output-signal status of the HD AV Converter					

Specifications of Command	Send/receive Data	Size (byte)	Parameter	Description on Operation
Sending to the main microcomputer	Command	3	QOS	To obtain data on the output-signal status of the HD AV Converter **Note:** This command is valid only for the HD AV Converter.
Receiving from the main microcomputer	Command	3	QOS	
	Input function	3	AV*	"*" represents the number of the currently selected Input (1-6).
	Signal mode information	4	****	For details, see the table below.
	Colour system information	3	***	For details, see the table below.
	Check Sum	2	**	

[Signal Mode]

SIG-Table	1st and 2nd	3rd and 4th	Signal Type
VIDEO	10	50	SDTV*625i
	20		SDTV*625P
	30		HDTV*1125i
	40		HDTV*750p
	10	60	SDTV*525i
	12		DTV*525i (PAL60)
	20		SDTV*525p
	30		HDTV*1125i
	40		HDTV*750p
	50	24	HDTV*1125p
Signal not supported	??	??	Out Of Range
No signal	_	_	No Signal
PC	PC	_	PC

[Colour system]

Return for a command	Type of input signal	Colour system
NTV	Composite	NTSC
PLV		PAL
SCV		SECAM
4NV		4.43NTSC
P6V		PAL60
BWV		BLACK/WHITE
NTS	S-Video	NTSC
PLS		PAL
SCS		SECAM
4NS		4.43NTSC
P6S		PAL60
BWS		BLACK/WHITE
CBR	Y Cb Cr	
RGB	RGB	
DIG	Digital	

6.1.11 QNG

QNG

Command Name	QNG			Auxiliary Command	None	
Conditions for Operation Modes	During Normal mode (normal on)	○	During Standby	○	During Factory mode	○
Function	To obtain data on the history of shutdown (SD) and power-down (PD)					

Specifications of Command	Send/receive Data	Size (byte)	Parameter	Description on Operation
Sending to the main microcomputer	Command	3	QNG	To obtain data on the history of shutdown (SD) and power-down (PD) **Note:** This command is valid only for the HD AV Converter.
Receiving from the main microcomputer	Command	3	QNG	
	Main information on the latest SD	1	See the tables on next page.	Value for SD data (1-8)
	Sub information on the latest SD	1		Value for subcategory data (0: no data, 1-9, A-C)
	Time when the latest SD was generated	7		1-5 byte: Hour, 6-7 byte: Minute
	Main information on the second latest SD	1		Value for SD data (1-8)
	Sub information on the second latest SD	1		Value for subcategory data (0: no data, 1-9, A-C)
	Time when the second latest SD was generated	7		1-5 byte: Hour, 6-7 byte: Minute
	Main information on the third latest SD	1		Value for SD data (1-8)
	Sub information on the third latest SD	1		Value for subcategory data (0: no data, 1-9, A-C)
	Time when the third latest SD was generated	7		1-5 byte: Hour, 6-7 byte: Minute
	Main information on the fourth latest SD	1		Value for SD data (1-8)
	Sub information on the fourth latest SD	1		Value for subcategory data (0: no data, 1-9, A-C)
	Time when the fourth latest SD was generated	7		1-5 byte: Hour, 6-7 byte: Minute
	Main information on the fifth latest SD	1		Value for SD data (1-8)
	Sub information on the fifth latest SD	1		Value for subcategory data (0: no data, 1-9, A-C)
	Time when the fifth latest SD was generated	7		1-5 byte: Hour, 6-7 byte: Minute
	Main information on the sixth latest SD	1		Value for SD data (1-8)
	Sub information on the sixth latest SD	1		Value for subcategory data (0: no data, 1-9, A-C)
	Time when the sixth latest SD was generated	7		1-5 byte: Hour, 6-7 byte: Minute
	Main information on the seventh latest SD	1		Value for SD data (1-8)
	Sub information on the seventh latest SD	1		Value for subcategory data (0: no data, 1-9, A-C)
	Time when the seventh latest SD was generated	7		1-5 byte: Hour, 6-7 byte: Minute
	Main information on the eighth latest SD	1		Value for SD data (1-8)
	Sub information on the eighth latest SD	1		Value for subcategory data (0: no data, 1-9, A-C)
	Time when the eighth latest SD was generated	7		1-5 byte: Hour, 6-7 byte: Minute
	Check Sum	2	**	

Remarks:
With the version for examination, no history is recorded because the SD function is not provided. However, flashing of the LEDs upon a shutdown is available.
For shutdowns generated at the same time and caused by the same factor, the factor is recorded only once as a log entry.

6.1.12 SD

[SD information]

SD factor	Value	Frequency of LED flashing	Indication on the tool	Remarks
No abnormality	0	None	"Blank"	No abnormality
Failure in 3-wire serial communication of the main microcomputer	1	1	MA-SRL	Failure in communication of the IF microcomputer (immediate shutdown)
Failure in IIC communication of the main microcomputer	2	(*1)	MA-IIC	See "Subcategory: Failure in IIC communication."
Failure in communication of the main microcomputer (incl. unknown)	3	9	MAIN	Failure in communication of the Main microcomputer (immediate shutdown)
D-SEL Config NG	4	10	D-SEL	D-SEL Config (immediate shutdown)
Failure in power supply	7	11	MA-PWR	See "Subcategory: Failure in power supply."
Failure in the fan	5	12	FAN	
High temperature of the unit	6		TEMP	

For data without a subcategory, the value for subcategory is "0," and the indication is "------."
*1 See the table in "Subcategory: Failure in IIC communication."
As a power-down is not recorded in a log, and LED control is not possible, a description on a power-down is not provided here.

[Subcategory: Failure in IIC communication] *1

SD factor	Value	Frequency of LED flashing	Indication on the tool	Remarks
No abnormality	0	None	"Blank"	No abnormality (improbable in an actual situation)
Failure in AV SWITCH communication	1	2	AV-SW	Immediate shutdown
Failure in RGB SWITCH communication	2		RGB-SW	Immediate shutdown
Failure in VDEC communication	7	3	VDEC	Immediate shutdown
Failure in AD Converter communication	8		ADC	Immediate shutdown
Failure in HDMI Tx communication	9	4	HDMI-TX	Immediate shutdown
Failure in HDMI Rx communication	A	5	HDMI-RX	Immediate shutdown
Failure in EDID-1 communication	3	6	EDID-1	Immediate shutdown
Failure in EDID-2 communication	4		EDID-2	Immediate shutdown
Failure in EDID-3 communication	5		EDID-3	Immediate shutdown
Failure in EDID-4 communication	6		EDID-4	Immediate shutdown
Failure in I/P communication	B	7	I/P	Immediate shutdown
Failure in MAIN EEPROM communication		8		Immediate shutdown

In a case of a failure in main EEPROM communication, a log will not be recorded, because communication with the EEPROM is disabled.

[Subcategory: Failure in power supply]

SD factor	Value	Frequency of LED flashing	Indication on the tool	Remarks
No abnormality	0	None	"Blank"	No abnormality (improbable in an actual situation)
DC-DC Converter power decrease	1	11	M-DCDC	Immediate shutdown
HDMI Tx OCP	2		OCP	Immediate shutdown
Power to small boards (to prevent flexible cables from catching fire)	3		FFC	Immediate shutdown

6.1.13 CNG, QHM and CHM

CNG

Command Name	CNG			Auxiliary Command	None	
Conditions for Operation Modes	During Normal mode (normal on)	×	During Standby	×	During Factory mode	○
Function	To clear the history of shutdown (SD) and power-down (PD)					

Specifications of Command	Send/receive Data	Size (byte)	Parameter	Description on Operation
Sending to the main microcomputer	Command	3	CNG	To clear the history of shutdown (SD) and power-down (PD) **Note:** This command is valid only for the HD AV Converter.
Receiving from the main microcomputer	Command	3	CNG	

Remarks:
With this command, all data on the latest to the eighth latest SD data items, which can be obtained by the QNG command, are cleared to "0."

QHM

Command Name	QHM			Auxiliary Command	None	
Conditions for Operation Modes	During Normal mode (normal on)	○	During Standby	○	During Factory mode	○
Function	To obtain data on the current accumulated power-on time of the HD AV Converter					

Specifications of Command	Send/receive Data	Size (byte)	Parameter	Description on Operation
Sending to the main microcomputer	Command	3	QHM	To obtain data on the current accumulated power-on time of the HD AV Converter **Note:** This command is valid only for the HD AV Converter.
Receiving from the main microcomputer	Command	3	QHM	
	Main information on the latest SD	5	*****	Data on the current accumulated power-on time (in hours) are returned.
	Sub information on the latest SD	2	**	Data on the current accumulated power-on time (in minutes) are returned.
	Check Sum	2	**	

Remarks:
The Hour Meter does not count in Standby mode.

CHM

Command Name	CHM			Auxiliary Command	None	
Conditions for Operation Modes	During Normal mode (normal on)	×	During Standby	×	During Factory mode	○
Function	To clear data of the Hour Meter to 0H0M					

Specifications of Command	Send/receive Data	Size (byte)	Parameter	Description on Operation
Sending to the main microcomputer	Command	3	CHM	To initialize the Hour Meter of the HD AV Converter **Note:** This command is valid only for the HD AV Converter.
Receiving from the main microcomputer	Command	3	CHM	

Remarks:
With this command, all time data that are obtained and displayed by the QHM command are cleared to "0."

6.1.14 QRX

QRX

Command Name	QRX			Auxiliary Command	None	
Conditions for Operation Modes	During Normal mode (normal on)	○	During Standby	×	During Factory mode	○
Function	To obtain data of the status register of the HDMI receiver					

Specifications of Command	Send/receive Data	Size (byte)	Parameter	Description on Operation
Sending to the main microcomputer	Command	3	QRX	To return data of the status register of the HDMI receiver **Note:** This command is valid only for the HD AV Converter.
Receiving from the main microcomputer	Command	3	QRX	
	H RES	4	****	Number of horizontal pixels (in decimal notation)
	V RES	4	****	Number of vertical lines (in decimal notation)
	H DE	4	****	Number of effective horizontal pixels (in decimal notation)
	V DE	4	****	Number of effective vertical lines (in decimal notation)
	INTRL	1	*	Interlace or progressive
	V POL	1	*	VSYNC polarity
	H POL	1	*	HSYNC polarity
	AUDIO	1	*	Sampling frequency
		1	*	Audio format
		1	*	Quantization bit
	COL SP	1	*	Colour space (AVI Info)
	COLMET	1	*	Colourimetry (AVI Info)
	ASPECT	1	*	Aspect (AVI Info)
	ACTIVE	1	*	Active format (AVI Info)
	V FMT	2	**	Video format (AVI Info)
	PIX RP	1	*	Pixel count
	SOURCE	8	********	Vendor name of the output device (max. 8 characters)
	SOURCE	16	**********	Model name of the output device
	Check Sum	2	**	

6.1.15 DISPLAY

Supplement on display

H RES	Number of horizontal pixels: The value of "0x60-0x3B" × 256 + "0x60-0x3A" is indicated in decimal notation.
V RES	Number of vertical lines: The value of "0x60-0x3D" × 256 + "0x60-0x3C" is indicated in decimal notation.
H DE	Number of effective horizontal pixels: The value of "0x60-0x4F" × 256 + "0x60-0x4E" is indicated in decimal notation.
V DE	Number of effective vertical lines: The value of "0x60-0x51" × 256 + "0x60-0x50" is indicated in decimal notation.
INTRL	Interlace or progressive: According to the value for Bit 2 of "0x60-0x55," either of the following indications is displayed: 0: PRG 1: INT
V POL	VSYNC polarity: According to the value for Bit 1 of "0x60-0x55," either of the following indications is displayed: 0: NEG 1: POS
H POL	HSYNC polarity: According to the value for Bit 0 of "0x60-0x55," either of the following indications is displayed: 0: NEG 1: POS
AUDIO (1 line)	Sampling frequency: According to the value for Bits 0-3 of "0x68-0x30," one of the following indications is displayed: 0: 44.1 k 2: 48 k 3: 32 k 8: 88.2 k A: 96 k C: 176.4 k E: 193 k Other values: ---
AUDIO (2 line)	Audio format: According to the value for Bit 1 of "0x68-0x2A," either of the following indications is displayed: 0: PCM 1: no PCM
AUDIO (3 line)	Quantization bit: According to the value for Bits 0-3 of "0x68-0x31," either of the following indications is displayed: 2: 16 bit 3: 20 bit 4: 18 bit 5: 22 bit 8: 19 bit 9: 23 bit A: 20 bit B: 24 bit C: 17 bit D: 21 bit Other values: ---
COL SP	Colour space (AVI Info): According to the value for Bits 5-6 of "0x68-0x44," either of the following indications is displayed: 0: RGB 1: 422 2: 444 3: Future
COLMET	Colourimetry (AVI Info): According to the value for Bits 6-7 of "0x68-0x45," either of the following indications is displayed: 0: --- 1: 601 2: 709 3: Future
ASPECT	Aspect (AVI Info): According to the value for Bits 4-5 of "0x68-0x45," either of the following indications is displayed: 0: --- 1: 4:3 2: 16:9 3: Future
ACTIVE	Active format (AVI Info): According to the value for Bits 0-3 of "0x68-0x45," either of the following indications is displayed: 2: box 16:9 (top) 3: box (14:9 (top) 4: box > 16:9 (centr) 8: Same as pict 9: 4:3 (centr) A: 16:9 (centr) B: 14:9 (centr) D: 4:3 (sh & pr 14:9) E: 16:9 (sh & 14:9) F: 16:9 (sh &4:3) Other values: ---
V FMT	Video format (AVI Info): According to the value for Bits 0-6 of "0x68-0x47," either of the following indications is displayed: 1: 640x480p@60 2: 720x480p@60 3: 720x480p@60 4: 1280x720p@60 5: 1920x1080i@60 6: 720x480i@60 7: 720x480i@60 8: 720x240p@60 9: 720x240p@60 A: (2880) x480i@60 B: (2880) x480i@60 C: (2880) x240p@60 D: (2880) x240p@60 E: 1440x480p@60 F: 1440x480p@60 10: 1920x1080p@60 11: 720x576p@50 12: 720x576p@50 13: 1280x720p@50 14: 1920x1080i@50 15: 720x576i@50 16: 720x576i@50 17: 720x288p@50 18: 720x288p@50 19: (2880) x576i@50 1A: (2880) x576i@50 1B: (2880) x288p@50 1C: (2880) x288p@50 1D: 1440x576p@50 1E: 1440x576p@50 1F: 1920x1080p@50 20: 1920x1080p@24 21: 1920x1080p@25 22: 1920x1080p@30 23: 2880x480p@60 24: 2880x480p@60 25: 2880x576p@50 26: 2880x576p@50 27: 1920x1080i@50 28: 1920x1080i@100 29: 1280x720p@100 2A: 720x576p@100 2B: 720x576p@100 2C: 720x576i@100 2D: 720x576i@100 2E: 1920x1080i@120 2F: 1280x720p@120 30: 720x480p@120 31: 720x480p@120 32: 720x480i@120 33: 720x480i@120 34: 720X576p@200 35: 720X576p@200 36: 720x576i@200 37: 720x576i@200 38: 720x480p@240 39: 720x480p@240 3A: 720x480i@240 3B: 720x480i@240 Other values: ---
PIX RP	Pixel count: According to the value for Bits 0-3 of "0x68-0x48," either of the following indications is displayed: 1: 01 2: 02 3: 03 4: 04 5: 05 6: 06 7: 07 8: 08 9: 09 A: 10 Other values: ---
SOURCE (1 line)	Vendor name of the output device: The values from "0x68-0x64" to "0x68-0x6B" are converted to ASCII codes and displayed in a maximum of 8 characters. The value 0 is represented by a blank. Example of display: If the values are 50, 49, 4F, 4E, 45, 45, and 52, "PIONEER" is indicated.
SOURCE (2 line)	Model name of the output device: The values from "0x68-0x6C" to "0x68-0x7B" are converted to ASCII codes and displayed in a maximum of 8 characters. The value 0 is represented by a blank. Example of display: If the values are 44, 56, 52, 2D, 44, 54, 39, and 30, "DVR-DT90" is indicated.

6.1.16 QTX

QTX

Commad Name	QTX			Auxiliary Command	None	
Conditions for Operation Modes	During Normal mode (normal on)	○	During Standby	×	During Factory mode	○
Function	To obtain data of the status register of the HDMI transmitter					

Specifications of Command	Send/receive Data	Size (byte)	Parameter	Description on Operation
Sending to the main microcomputer	Command	3	QTX	To return data of the status register of the HDMI transmitter **Note:** This command is valid only for the HD AV Converter.
Receiving from the main microcomputer	Command	3	QTX	
	H RES	4	****	Number of horizontal pixels (in decimal notation)
	V RES	4	****	Number of vertical lines (in decimal notation)
	H DE	4	****	Number of effective horizontal pixels (in decimal notation)
	V DE	4	****	Number of effective vertical lines (in decimal notation)
	INTRL	1	*	Interlace or progressive
	V POL	1	*	VSYNC polarity
	H POL	1	*	HSYNC polarity
	AUDIO	1	*	Sampling frequency
		1	*	Audio format
		1	*	Quantization bit
	COL SP	1	*	Colour space (AVI Info)
	COLMET	1	*	Colourimetry (AVI Info)
	ASPECT	1	*	Aspect (AVI Info)
	ACTIVE	1	*	Active format (AVI Info)
	V FMT	2	**	Video format (AVI Info)
	PIX RP	1	*	Pixel count
	SOURCE	8	********	Vendor name of the output device (max. 8 characters)
	SOURCE	16	**********	Model name of the output device
	Check Sum	2	**	

6.1.17 DISPLAY

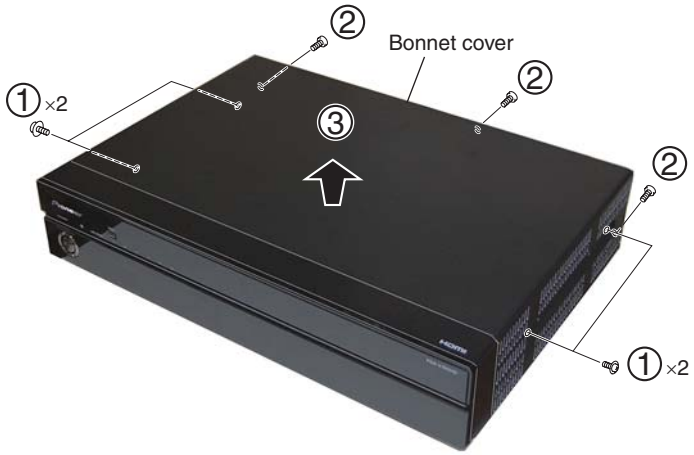
Supplement on display

H RES	Number of horizontal pixels: The value of "0x72-0x3B" × 256 + "0x72-0x3A" is indicated in decimal notation.
V RES	Number of vertical lines: The value of "0x72-0x3D" × 256 + "0x72-0x3C" is indicated in decimal notation.
H DE	Number of effective horizontal pixels: The value of "0x72-0x37" × 256 + "0x72-0x36" is indicated in decimal notation.
V DE	Number of effective vertical lines: The value of "0x72-0x39" × 256 + "0x72-0x38" is indicated in decimal notation.
INTRL	Interlace or progressive: According to the value for Bit 2 of "0x72-0x3F," either of the following indications is displayed: 0: PRG 1: INT
V POL	VSYNC polarity: According to the value for Bit 1 of "0x72-0x3F," either of the following indications is displayed: 0: NEG 1: POS
H POL	HSYNC polarity: According to the value for Bit 0 of "0x72-0x3F," either of the following indications is displayed: 0: NEG 1: POS
AUDIO (1 line)	Sampling frequency: According to the value for Bits 0-3 of "0x7A-0x21," one of the following indications is displayed: 0: 44.1 k 2: 48 k 3: 32 k 8: 88.2 k A: 96 k C: 176.4 k E: 193 k Other values: ---
AUDIO (2 line)	Audio format: According to the value for Bit 4 of "0x7A-0x1D," either of the following indications is displayed: 0: PCM 1: Compressed
AUDIO (3 line)	Quantization bit: According to the value for Bits 4-7 of "0x7A-0x18," either of the following indications is displayed: 2: 16 bit 3: 20 bit 4: 18 bit 5: 22 bit 8: 19 bit 9: 23 bit A: 20 bit B: 24 bit C: 17 bit D: 21 bit Other values: ---
COL SP	Colour space (AVI Info): According to the value for Bits 5-6 of "0x7A-0x44," either of the following indications is displayed: 0: RGB 1: 422 2: 444 3: Future
COLMET	Colourimetry (AVI Info): According to the value for Bits 6-7 of "0x7A-0x45," either of the following indications is displayed: 0: --- 1: 601 2: 709 3: Future
ASPECT	Aspect (AVI Info): According to the value for Bits 4-5 of "0x7A-0x45," either of the following indications is displayed: 0: --- 1: 4:3 2: 16:9 3: Future
ACTIVE	Active format (AVI Info): According to the value for Bits 0-3 of "0x7A-0x45," either of the following indications is displayed: 2: box 16:9 (top) 3: box (14:9 (top) 4: box > 16:9 (centr) 8: Same as pict 9: 4:3 (centr) A: 16:9 (centr) B: 14:9 (centr) D: 4:3 (sh & pr 14:9) E: 16:9 (sh & 14:9) F: 16:9 (sh &4:3) Other values: ---
V FMT	Video format (AVI Info): According to the value for Bits 0-6 of "0x7A-0x47," either of the following indications is displayed: 1: 640x480p@60 2: 720x480p@60 3: 720x480p@60 4: 1280x720p@60 5: 1920x1080i@60 6: 720x480i@60 7: 720x480i@60 8: 720x240p@60 9: 720x240p@60 A: (2880) x480i@60 B: (2880) x480i@60 C: (2880) x240p@60 D: (2880) x240p@60 E: 1440x480p@60 F: 1440x480p@60 10: 1920x1080p@60 11: 720x576p@50 12: 720x576p@50 13: 1280x720p@50 14: 1920x1080i@50 15: 720x576i@50 16: 720x576i@50 17: 720x288p@50 18: 720x288p@50 19: (2880) x576i@50 1A: (2880) x576i@50 1B: (2880) x288p@50 1C: (2880) x288p@50 1D: 1440x576p@50 1E: 1440x576p@50 1F: 1920x1080p@50 20: 1920x1080p@24 21: 1920x1080p@25 22: 1920x1080p@30 23: 2880x480p@60 24: 2880x480p@60 25: 2880x576p@50 26: 2880x576p@50 27: 1920x1080i@50 28: 1920x1080i@100 29: 1280x720p@100 2A: 720x576p@100 2B: 720x576p@100 2C: 720x576i@100 2D: 720x576i@100 2E: 1920x1080i@120 2F: 1280x720p@120 30: 720x480p@120 31: 720x480p@120 32: 720x480i@120 33: 720x480i@120 34: 720X576p@200 35: 720X576p@200 36: 720x576i@200 37: 720x576i@200 38: 720x480p@240 39: 720x480p@240 3A: 720x480i@240 3B: 720x480i@240 Other values: ---
PIX RP	Pixel count: According to the value for Bits 0-3 of "0x7A-0x48," either of the following indications is displayed: 1: 01 2: 02 3: 03 4: 04 5: 05 6: 06 7: 07 8: 08 9: 09 A: 10 Other values: ---
SOURCE (1 line)	Vendor name of the output device: The values from "0x7A-0x64" to "0x7A-0x6B" are converted to ASCII codes and displayed in a maximum of 8 characters. The value 0 is represented by a blank. Example of display: If the values are 50, 49, 4F, 4E, 45, 45, and 52, "PIONEER" is indicated.
SOURCE (2 line)	Model name of the output device: The values from "0x7A-0x6C" to "0x7A-0x7B" are converted to ASCII codes and displayed in a maximum of 8 characters. The value 0 is represented by a blank. Example of display: If the values are 44, 56, 52, 2D, 44, 54, 39, and 30, "DVR-DT90" is indicated.

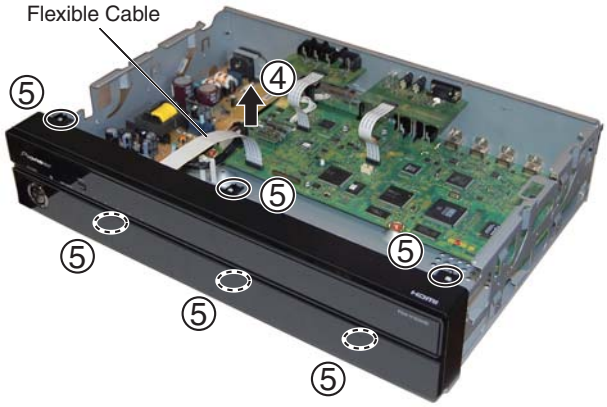
7. DISASSEMBLY

7.1 BONNET CASE and PANEL

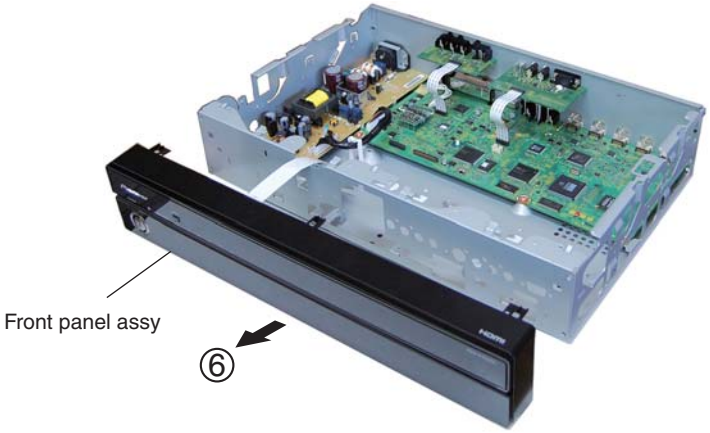
① Remove the four screws.
② Remove the three screws.
③ Remove the bonnet cover.



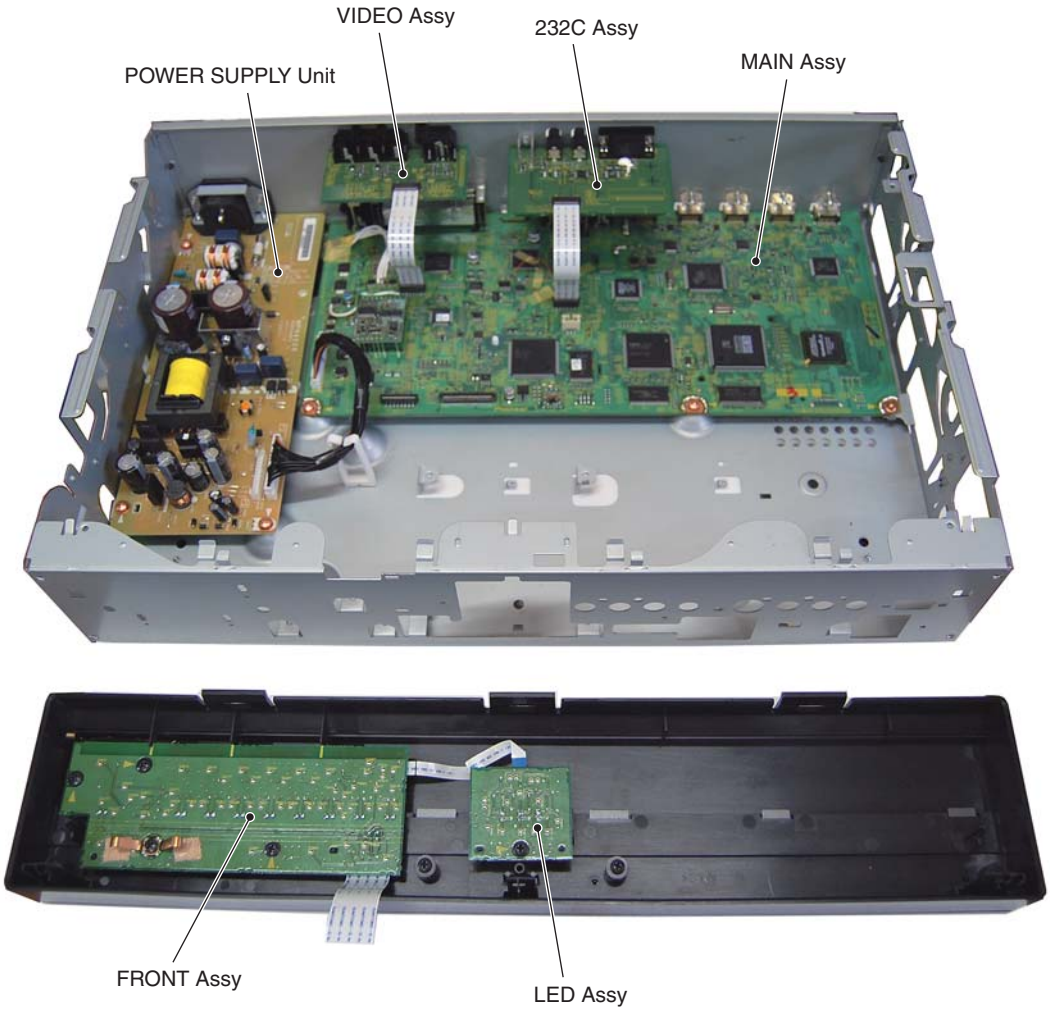
④ Disconnect the flexible cable from CN1005.
⑤ Unhook the six hooks.



⑥ Remove the front panel assy.



7.2 PCB LOCATION



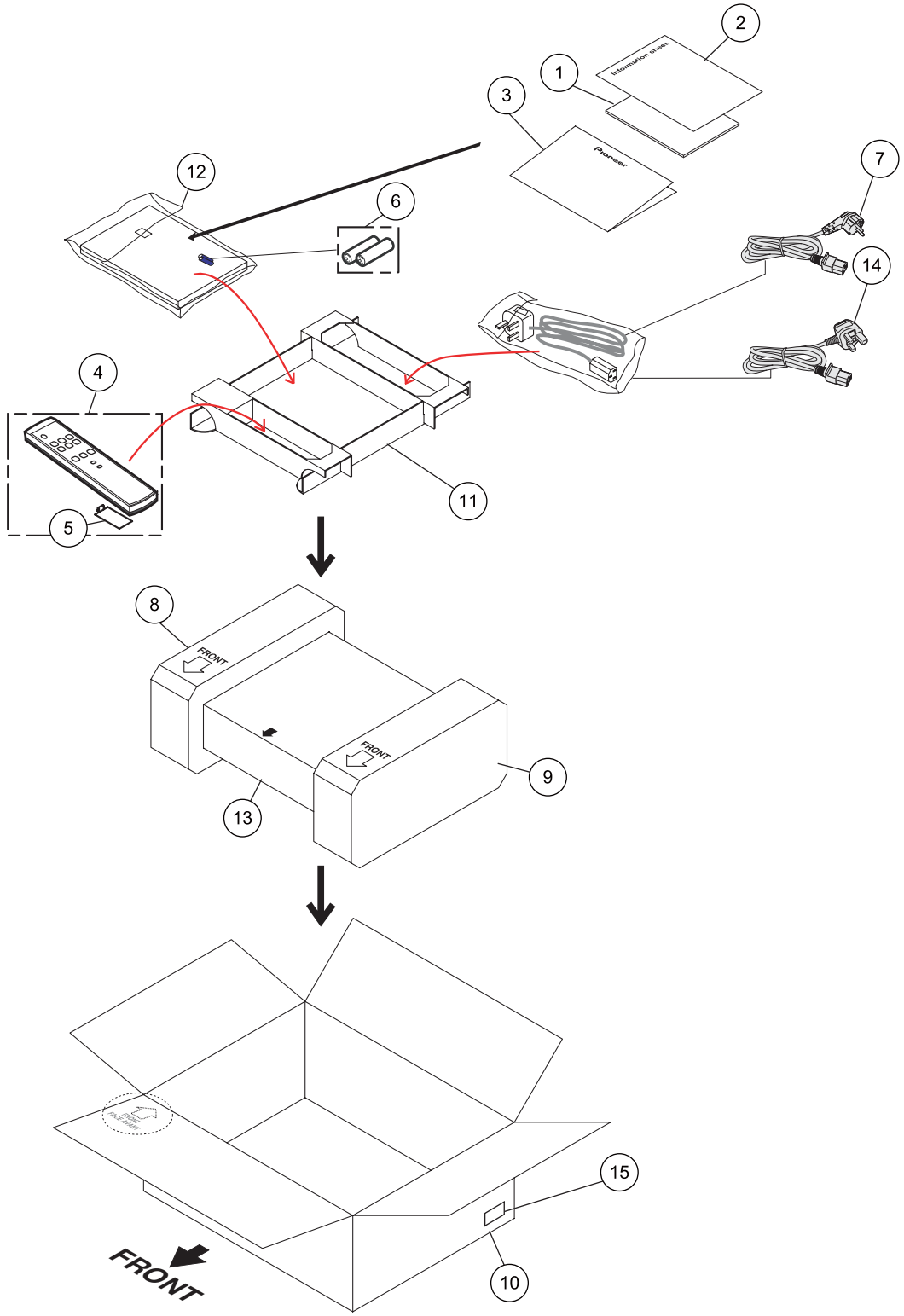
8. EACH SETTING AND ADJUSTMENT

■ **There is no infomation to be shown in the chapter.**

9. EXPLODED VIEWS AND PARTS LIST

NOTES:
- *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Screws adjacent to ▼ mark on product are used for disassembly.*
- *For the applying amount of lubricants or glue, follow the instructions in this manual. (In the case of no amount instructions, apply as you think it appropriate.)*

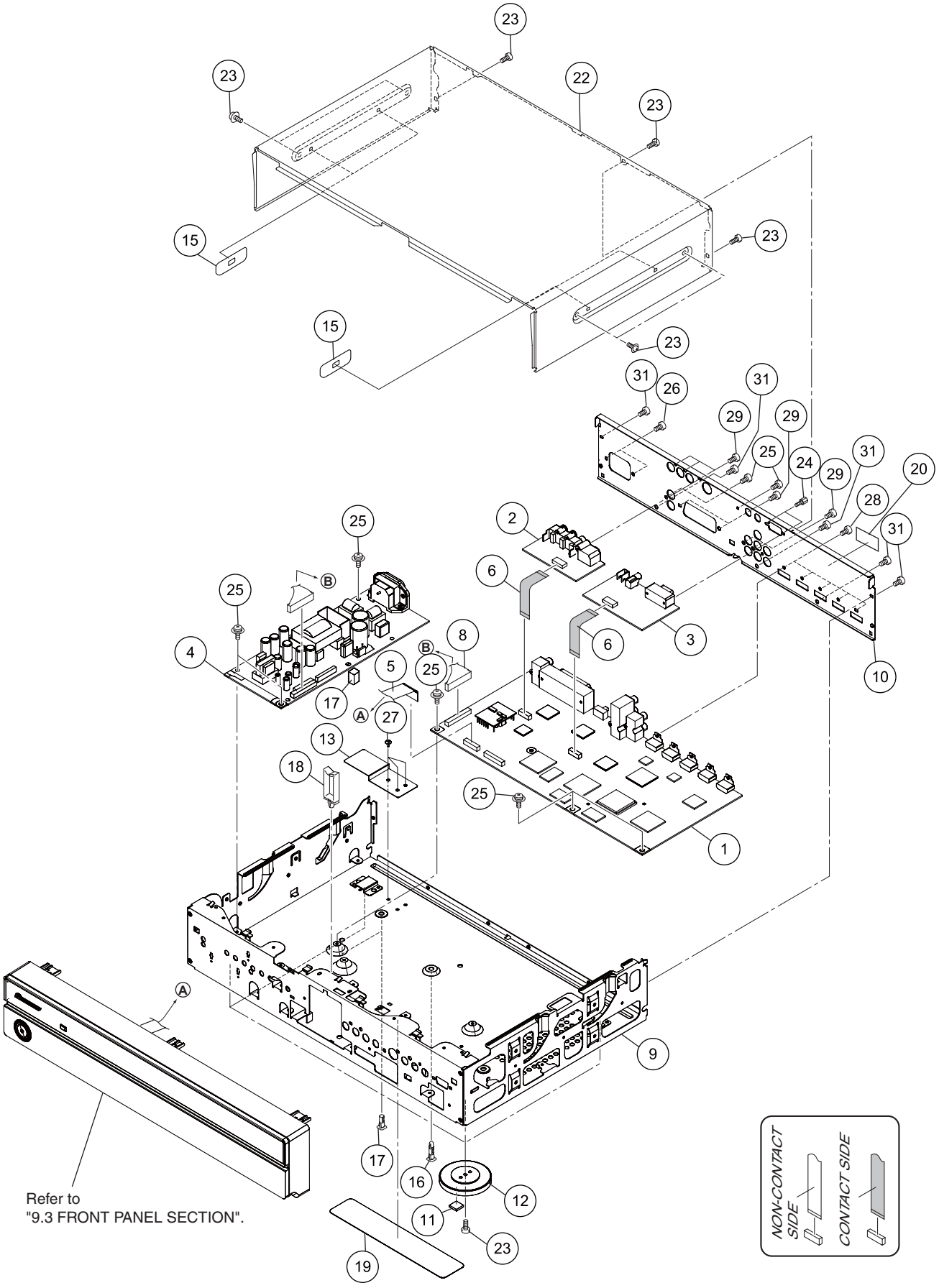
9.1 PACKING SECTION



PACKING SECTION PARTS LIST

Mark	No.	Description	Part No.
	1	Operating Instructions (Italian, Dutch, Spanish, Russian, English, French, German)	ARE1481
	2	Infomation Sheet	ARM1387
NSP	3	Warranty Card	ARY1204
	4	Remote Control Unit	AXD1557
	5	Battery Cover	AZN2573
NSP	6	Dry Cell Battery (R6P AA)	VEM1031
⚠	7	Power Cord	ADG1214
	8	Pad L	AHA2696
	9	Pad R	AHA2697
	10	Carton	AHD3585
	11	Manual Case	AHD3621
	12	Polyethylene Bag	AHG1310
	13	Laminate Sheet	AHG1350
⚠	14	Power Cord (for UK)	ADG1223
	15	Label	VRW1629

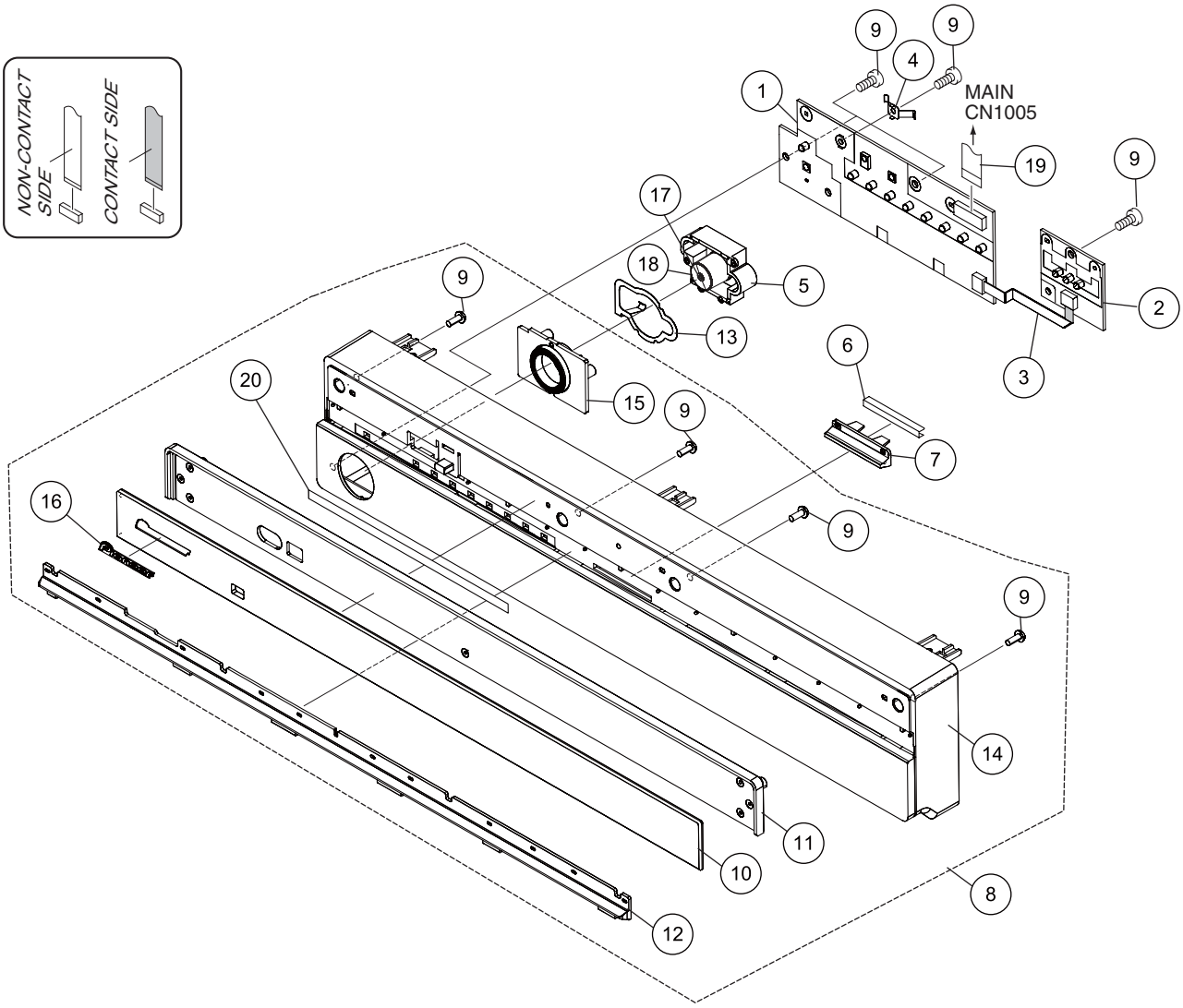
9.2 EXTERIOR SECTION



EXTERIOR SECTION PARTS LIST

Mark	No.	Description	Part No.
	1	MAIN Assy (SW)	AWV2520
	2	VIDEO Assy	AWW1298
	3	232C Assy (SW)	AWW1297
⚠	4	POWER SUPPLY Unit	AXY1205
	5	Flexible Cable	ADD1520
	6	Flexible Cable	ADD1521
	7	. . . . .	
	8	16P Housing Wire	ADX3591
	9	Base Chassis	ANA2078
	10	Terminal Panel	ANC2436
	11	Rubber Foot	VEB1349
	12	Insulator (ABS)	VNK6208
	13	Barrier	AAX3522
	14	. . . . .	
	15	Bonnet Sheet	AAX3562
	16	Circuit Board Spaer	AEC1969
	17	Circuit Board Spaer	AEC2028
	18	Reuse Wire Spacer	AEC2038
	19	Bottom Cover	AAX3223
NSP	20	Serial Label	ARW1100
	21	. . . . .	
	22	Metal Bonnet	ANE1668
	23	Screw	ABZ30P060FTB
	24	Hexagon Headed Screw	BBA1051
	25	Screw	BBB30P080FCC
	26	Screw	BBZ30P100FTC
	27	Rivet A	EBC1158
	28	Screw	BMZ30P060FTC
	29	Screw	BPZ30P080FTB
	30	. . . . .	
	31	Screw	BBZ30P060FTB

9.3 FRONT PANEL SECTION

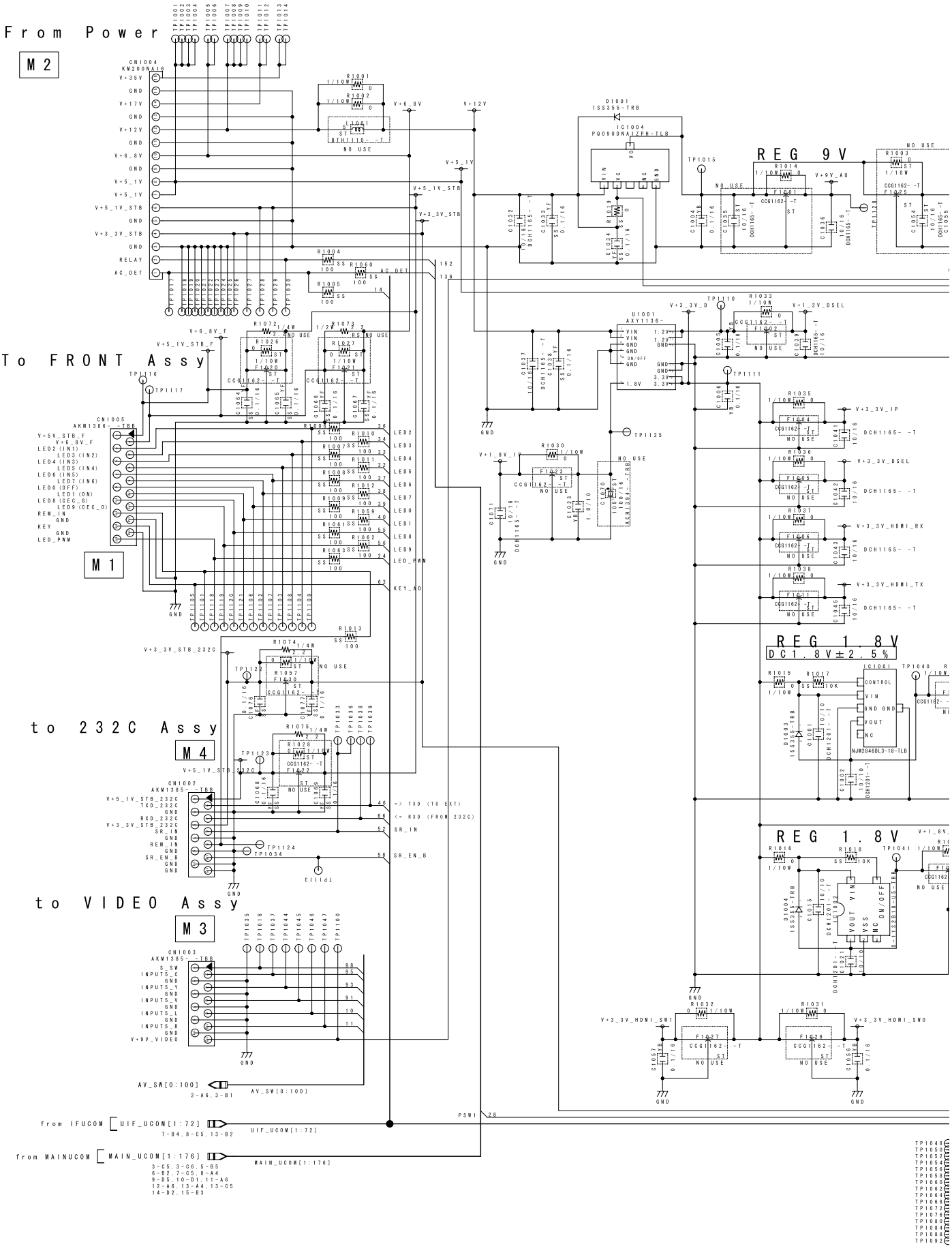


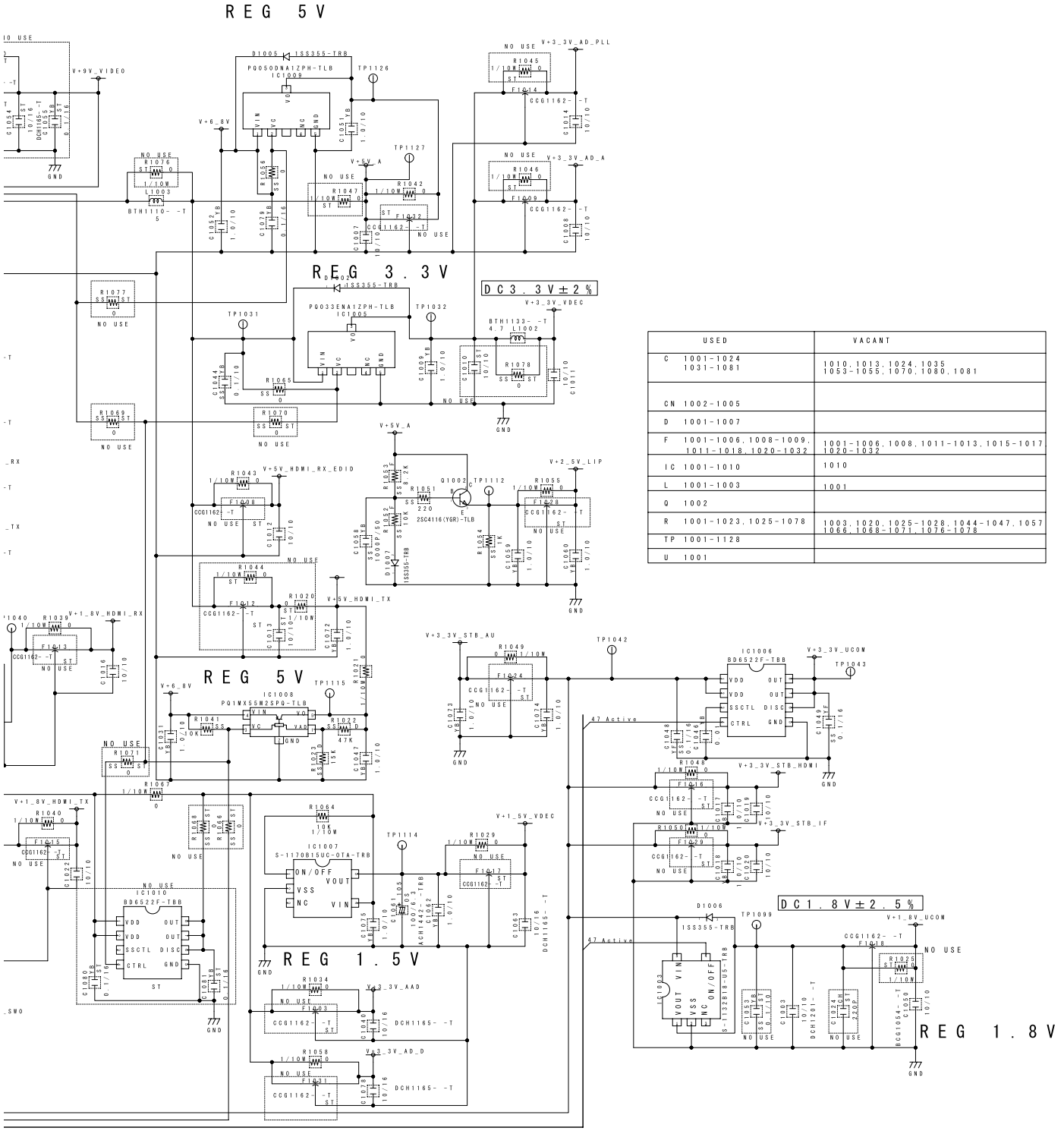
FRONT PANEL SECTION PARTS LIST

Mark	No.	Description	Part No.
	1	Front Assy (SW)	AWW1296
	2	LED Assy (SW)	AWW1299
	3	Flexible Cable	ADD1522
⚠	4	Earth Metal	BNG1336
	5	Power Button	AAD4155
	6	Diffuser Sheet For I	AAX3557
	7	Lens for ICE LED	AMR3714
	8	Front Panel Assy	AXG1042
	9	Screw	BPZ30P080FTB
	10	Indicator Panel	AAK2918
	11	Panel Flame	AAN1487
	12	Center Lens	AAN1488
	13	PWSW Ground Plate	ANG3112
	14	Front Panel	AMB3046
	15	Escutcheon Ring	AAD4156
	16	Pioneer Name Plate	VAM1158
	17	Key Lens (ABS)	VNK6198
	18	Key Top PW (ABS)	VNK6312
	19	Flexible Cable	ADD1520
	20	Diffuser Sheet	AAX3553

10. SCHMATIC DIAGRAM

10.1 MAIN ASSY (1/15) BOARD IF BLOCK

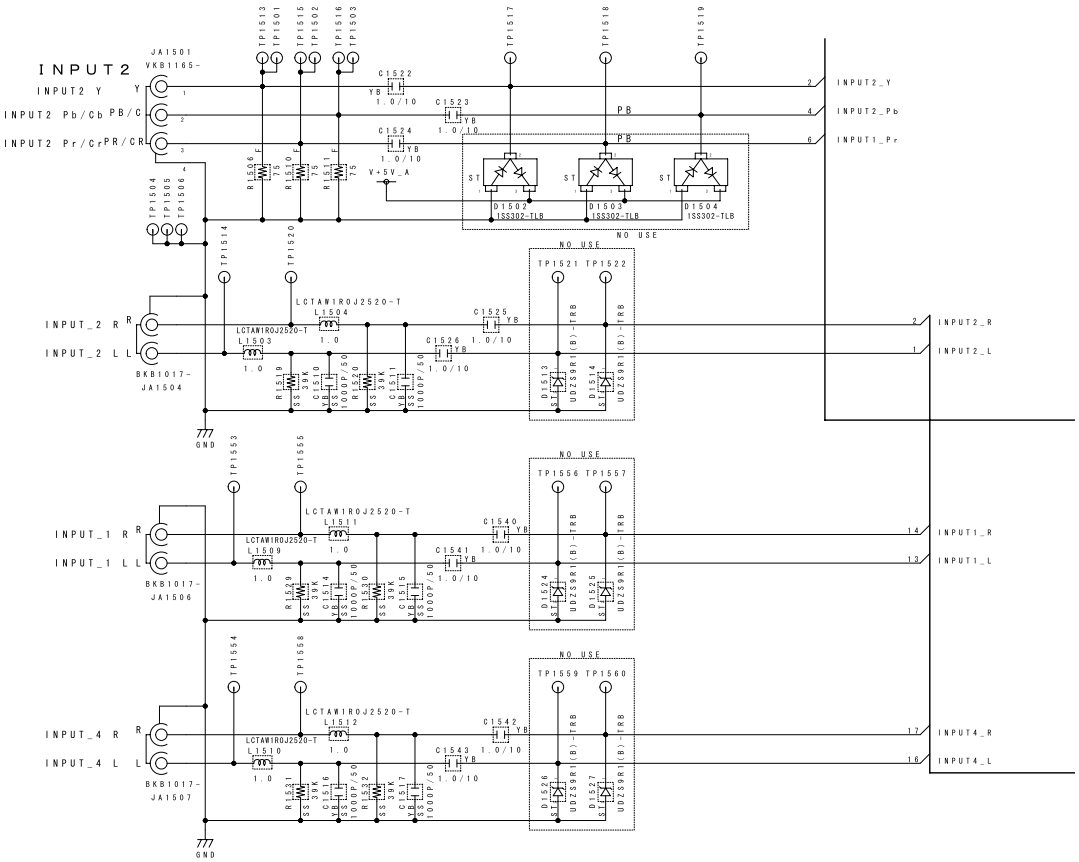


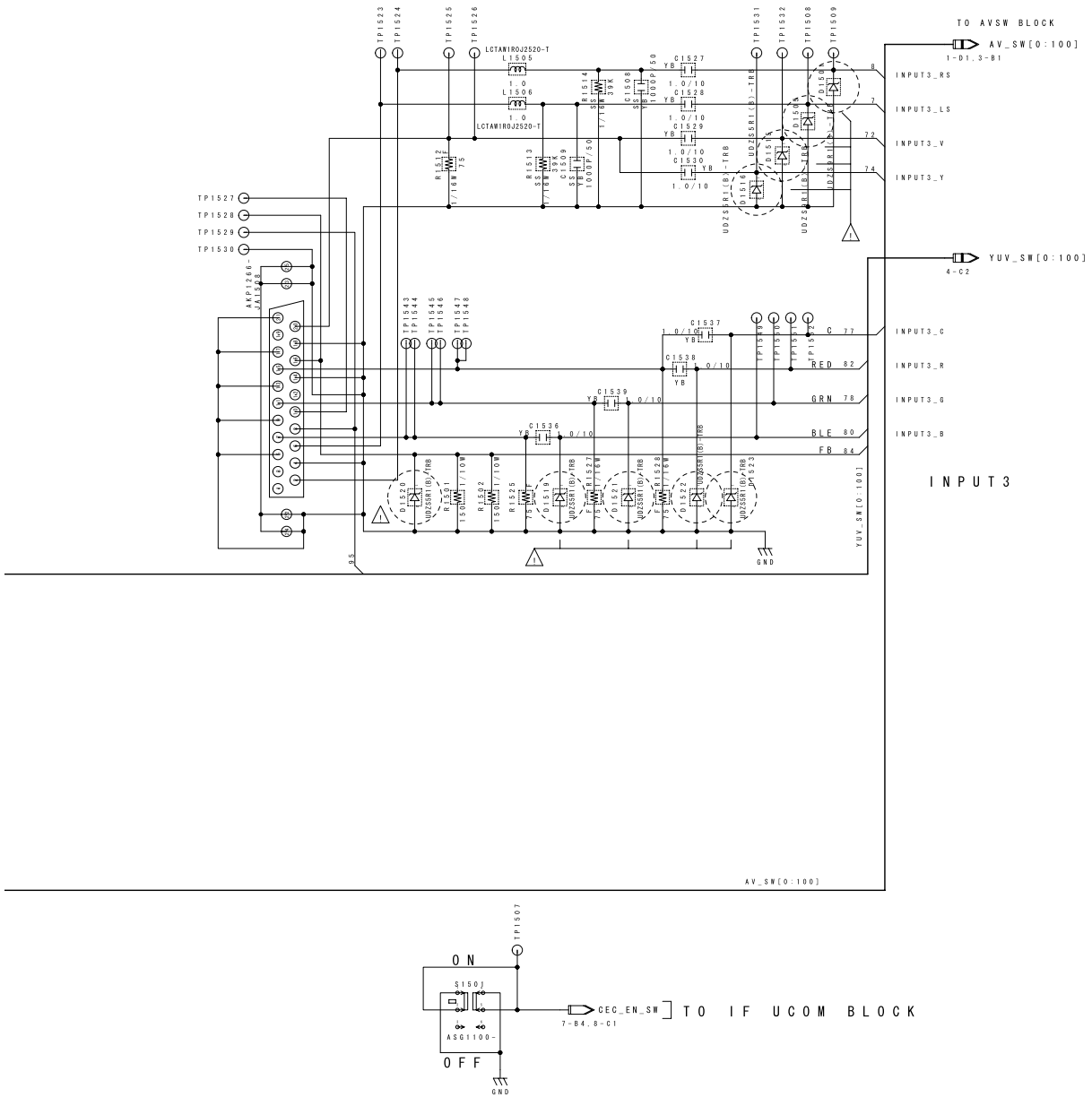


USED	VACANT
C 1001-1024 1031-1081	1010,1013,1024,1035 1053-1055,1070,1080,1081
CN 1002-1005	
D 1001-1007	
F 1001-1006,1008-1009, 1011-1018,1020-1032	1001-1006,1008,1011-1013,1015-1017 1020-1032
IC 1001-1010	1010
L 1001-1003	1001
Q 1002	
R 1001-1023,1025-1078	1003,1020,1025-1028,1044-1047,1057 1066,1068-1071,1076-1078
TP 1001-1128	
U 1001	

10.2 MAIN ASSY (2/15) AV IO BLOCK

	USED	VACANT
C	1508-1511, 1514-1517, 1522-1530, 1536-1543	
D	1501-1505, 1513-1516, 1519-1527	1502-1504, 1513, 1514, 1524-1527
JA	1501, 1504, 1506-1508	
L	1503-1506, 1509-1512	
R	1501, 1502, 1506, 1510-1514, 1519, 1520, 1525, 1527-1532	
S	1501	
TP	1501-1509, 1513-1532, 1543-1560	



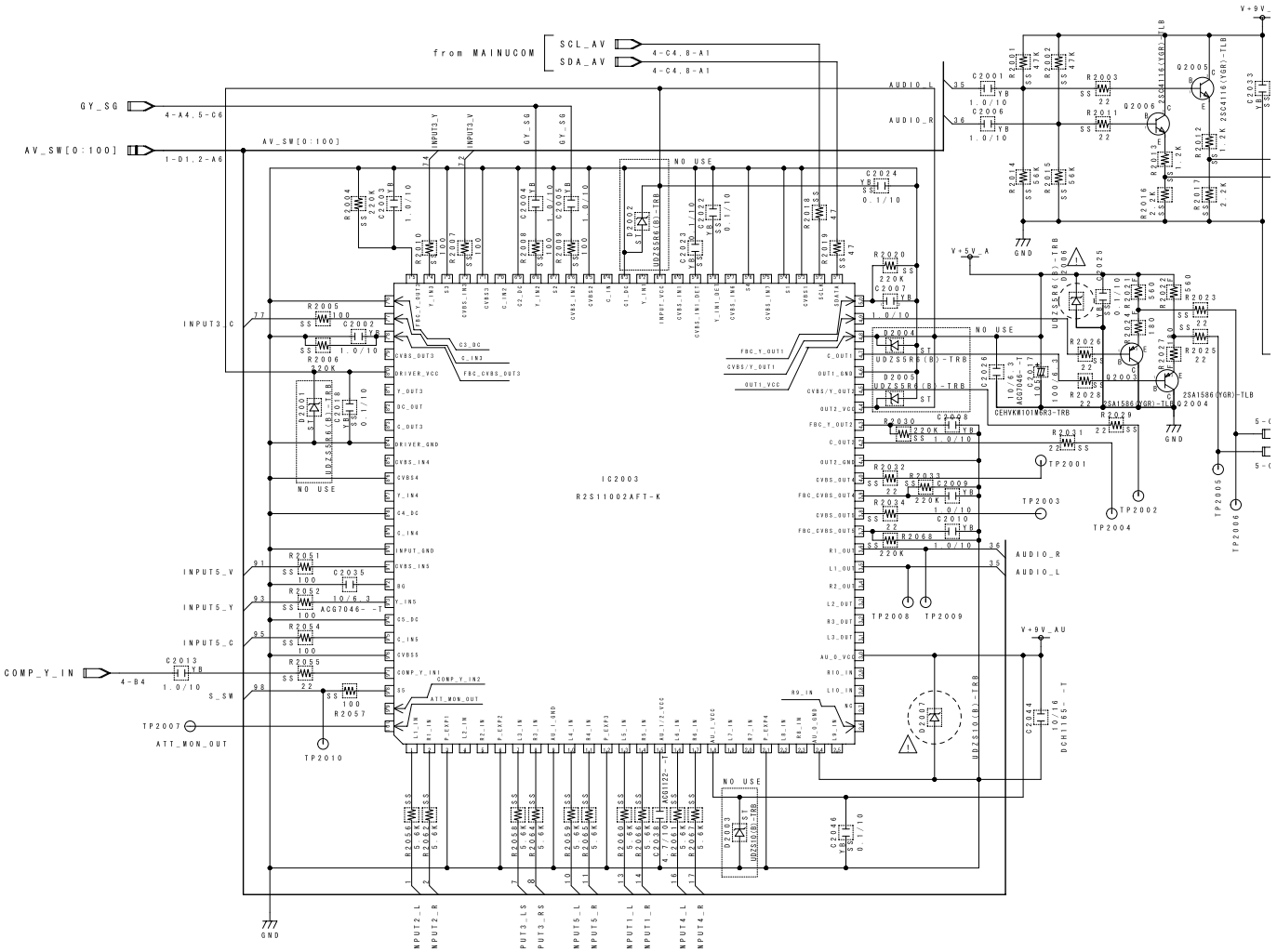


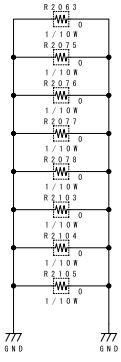
The ⚠ mark found on some component parts should be replaced with same parts(safety regulation authorized) of identical designation.

MAIN ASS'Y (02/15)
AV IO ASS'Y

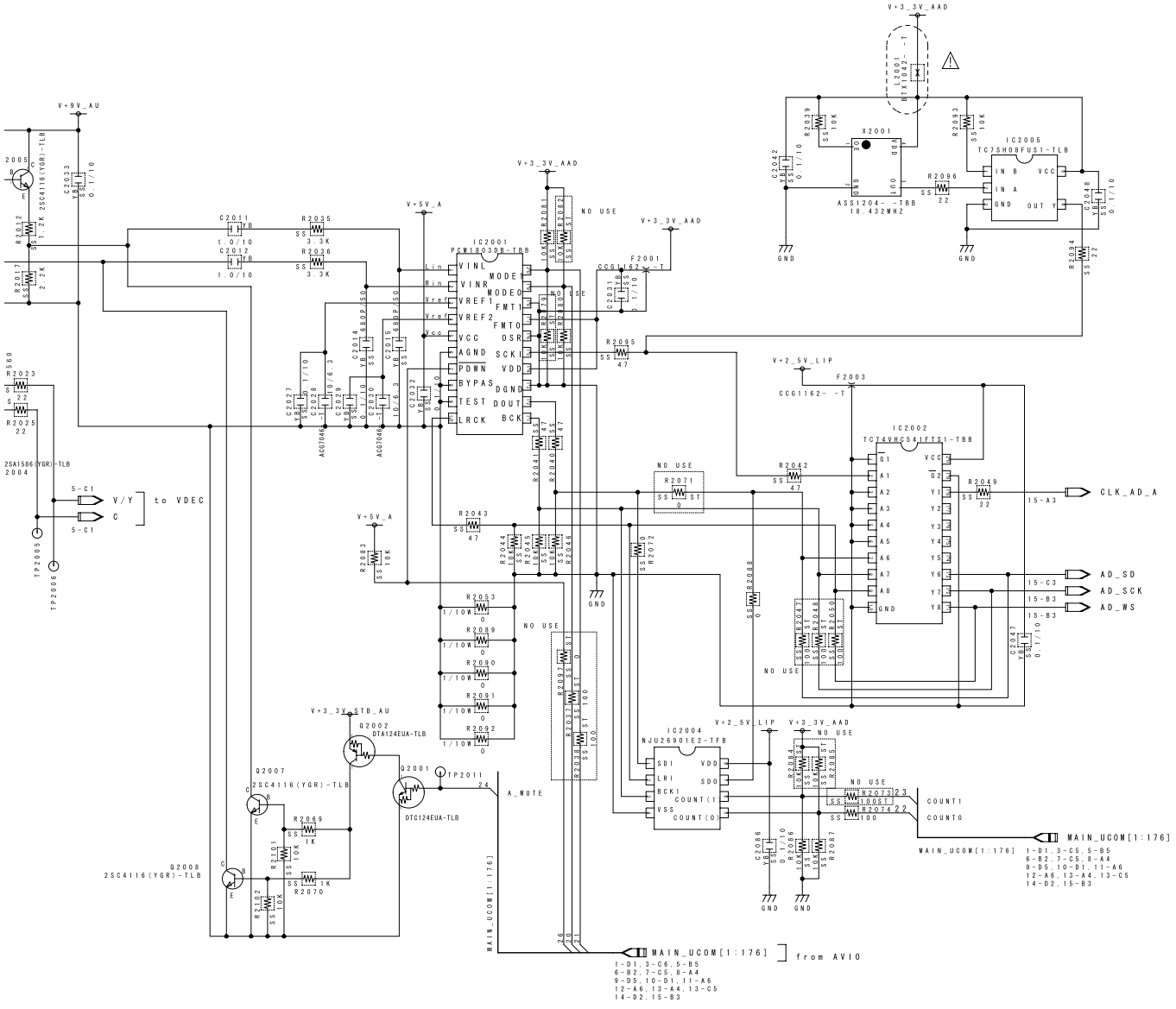
AWV2520- :A2V2520

10.3 MAIN ASSY (3/15) AV SW BLOCK





	USED	VACANT
C	2001-2015, 2017, 2018, 2022-2033, 2035, 2038, 2042, 2044, 2046-2048, 2086	
D	2001-2007	2001-2005
F	2001, 2003	
IC	2001-2005	
L	2001	
Q	2001-2008	
R	2001-2097, 2101-2105	2037, 2038, 2047, 2048, 2050, 2071, 2073, 2079, 2082 2084, 2085,
TP	2001-2011	
X	2001	

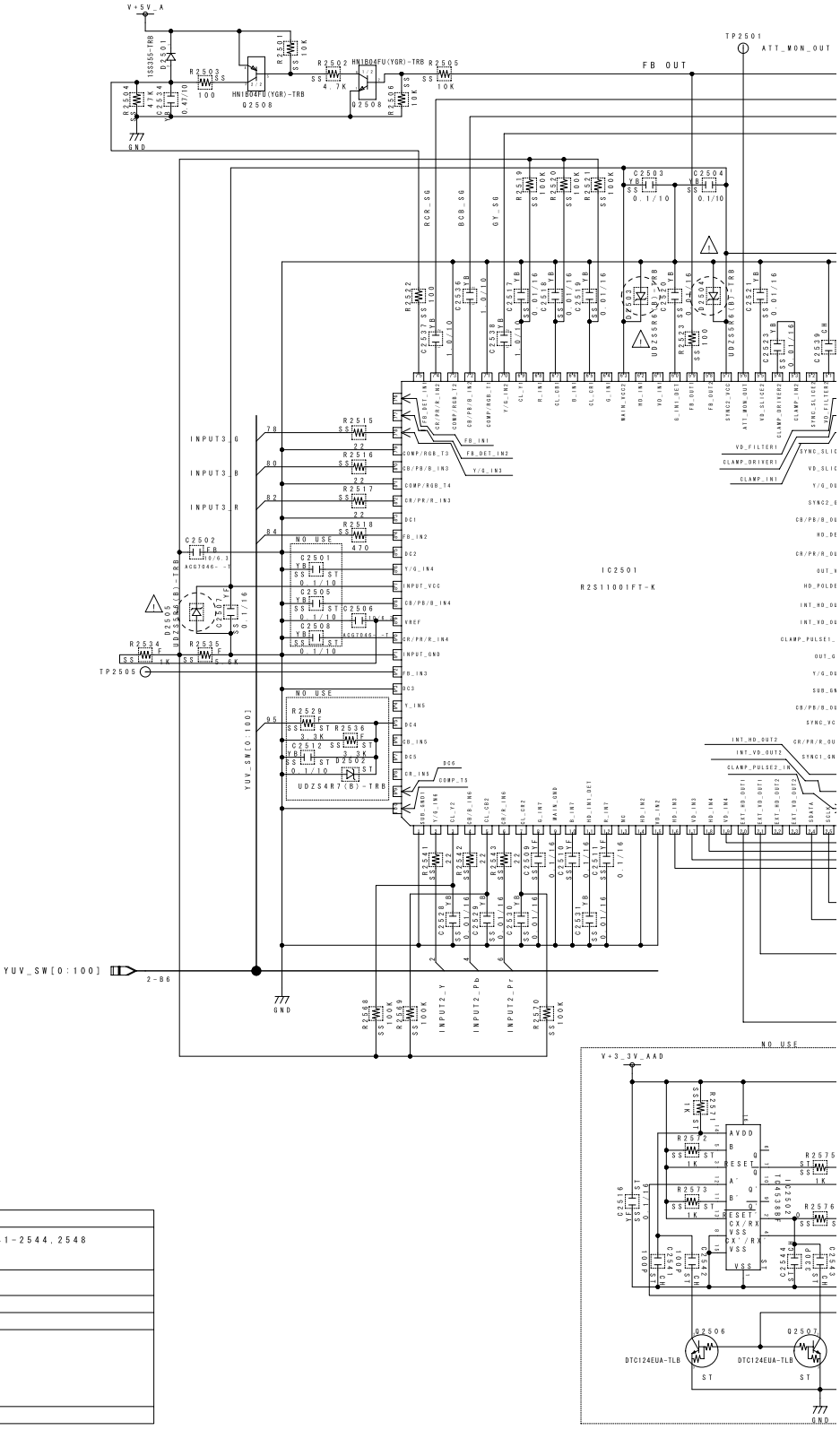


The ⚠ mark found on some component parts should be replaced with same parts(safety regulation authorized) of identical designation.

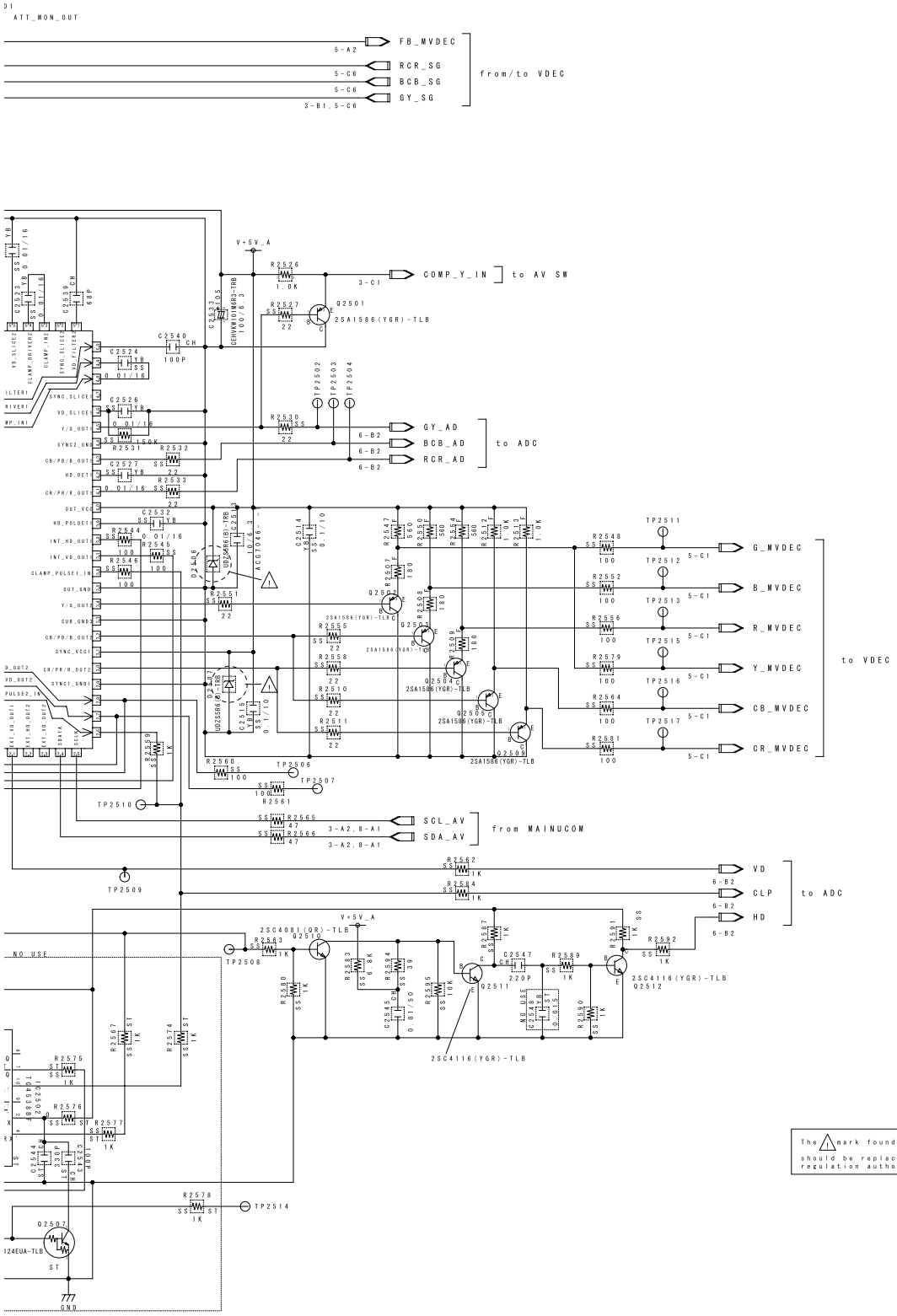
MAIN ASS'Y (03/15)
AV SW ASS'Y

AWV2520- :A3V2520

10.4 MAIN ASSY (4/15) RGB SW BLOCK



	USED	VACANT
C	2501-2521, 2523, 2524, 2526-2534, 2536-2545 2547-2548	2501, 2505, 2508, 2512, 2516, 2541-2544, 2548
D	2501-2507	2502
IC	2501, 2502	2502
Q	2501-2512	2506-2507
R	2501-2513, 2515-2523, 2526, 2527, 2529-2536, 2541-2548, 2550-2552, 2554-2556, 2558-2581, 2583, 2584, 2587, 2589-2592, 2594, 2595	2529, 2536, 2567, 2571-2578
TP	2501-2517	

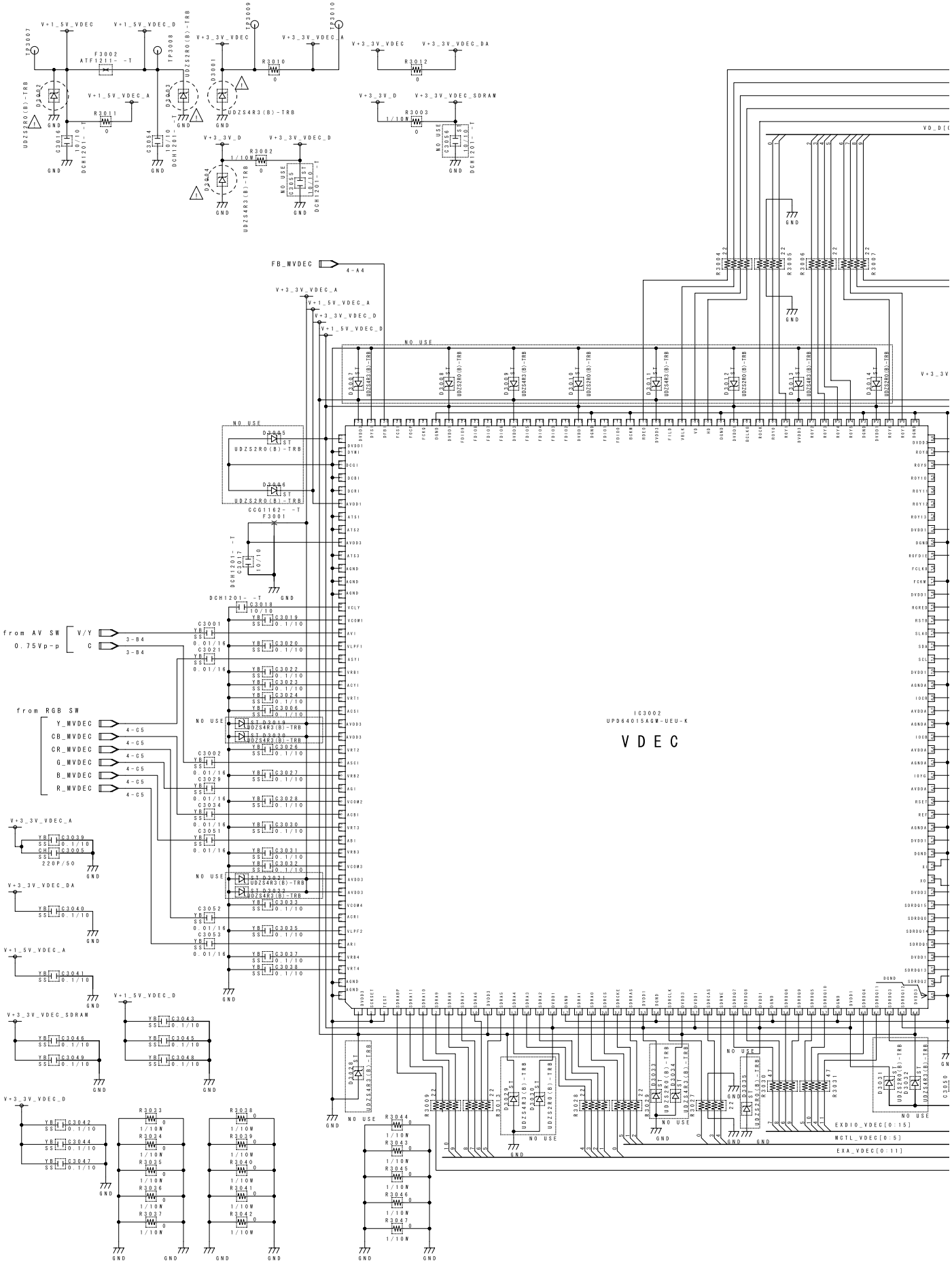


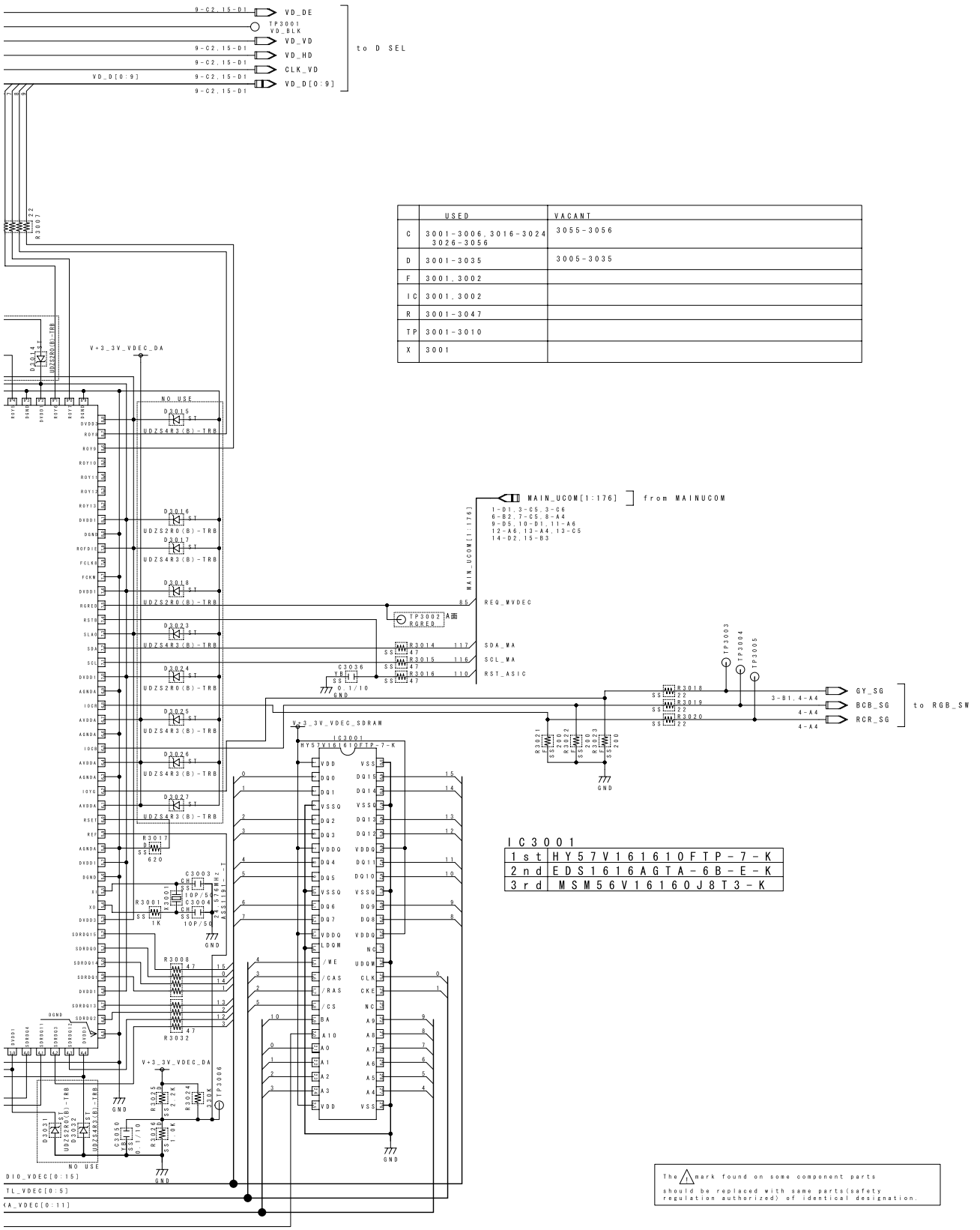
The ⚠ mark found on some component parts should be replaced with same parts(safety regulation authorized) of identical designation.

MAIN ASS'Y (04/15)
RGB SW BLOCK

AWV2520- :A4V2520

10.5 MAIN ASSY (5/15) VDEC BLOCK





	USED	VACANT
C	3001-3006, 3016-3024 3026-3056	3055-3056
D	3001-3035	3005-3035
F	3001, 3002	
IC	3001, 3002	
R	3001-3047	
TP	3001-3010	
X	3001	

IC3001

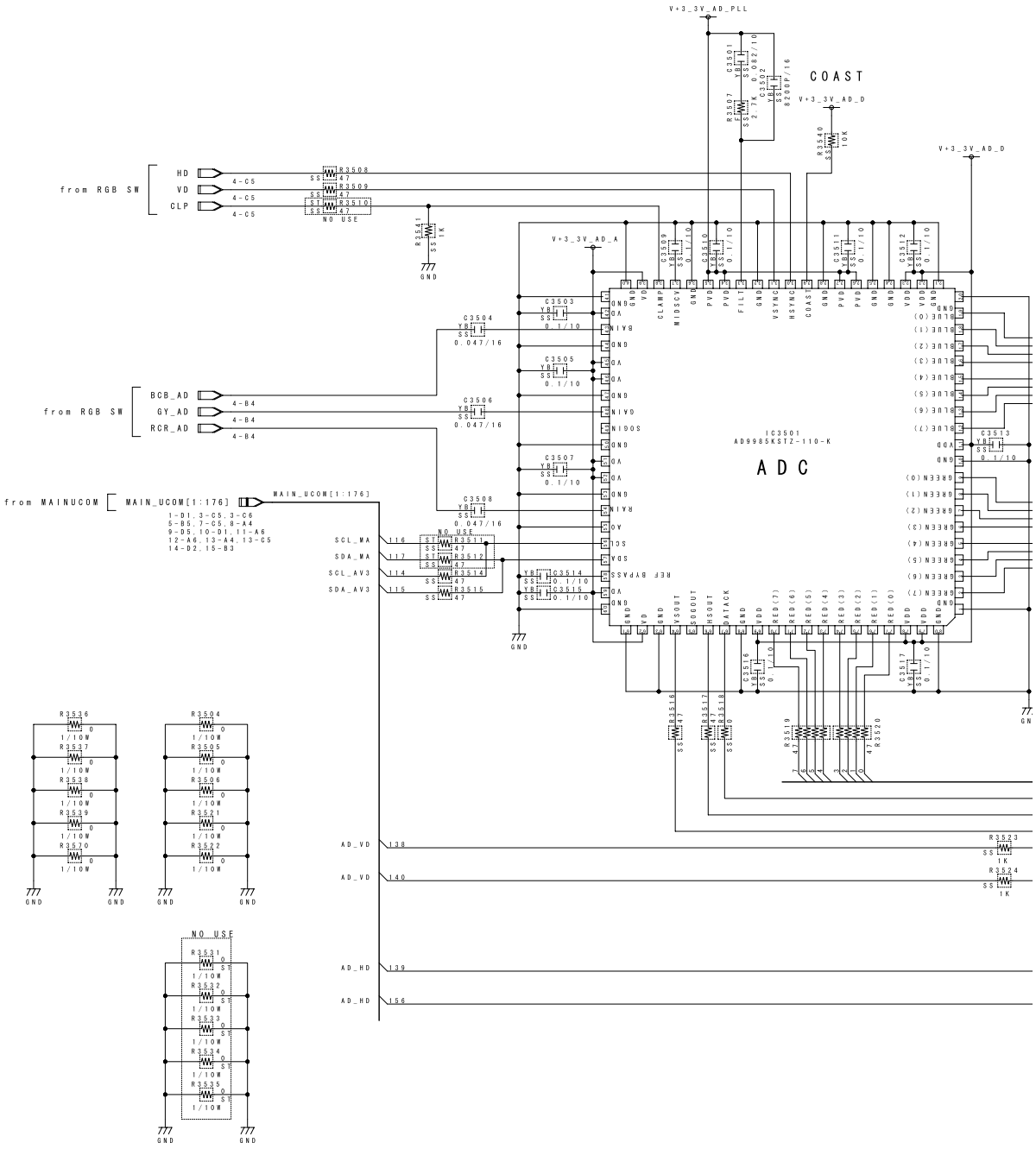
1st	HY57V161610FTP-7-K
2nd	EDS1616AGTA-6B-E-K
3rd	MSM56V16160J8T3-K

The ⚠ mark found on some component parts should be replaced with same parts(safety regulation authorized) of identical designation.

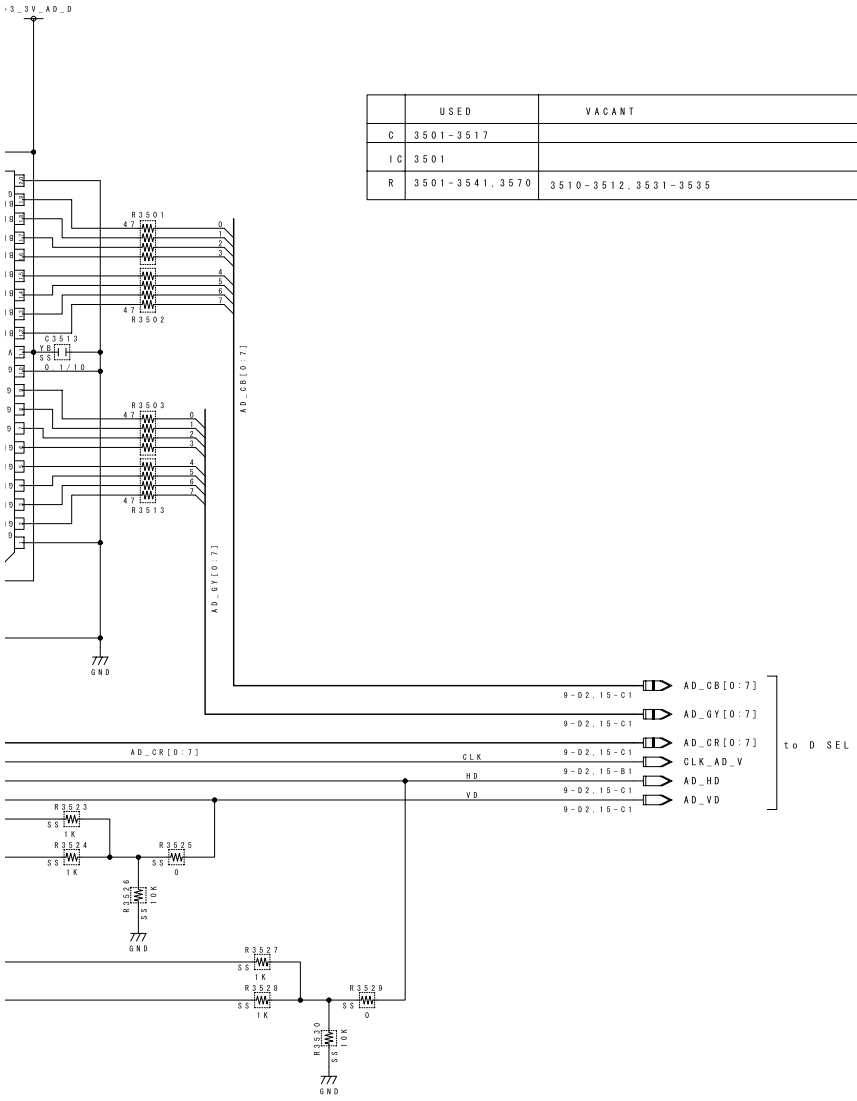
MAIN ASS'Y (05/15)
VDEC BLOCK

AWV2520- :A5V2520

10.6 MAIN ASSY (6/15) ADC BLOCK



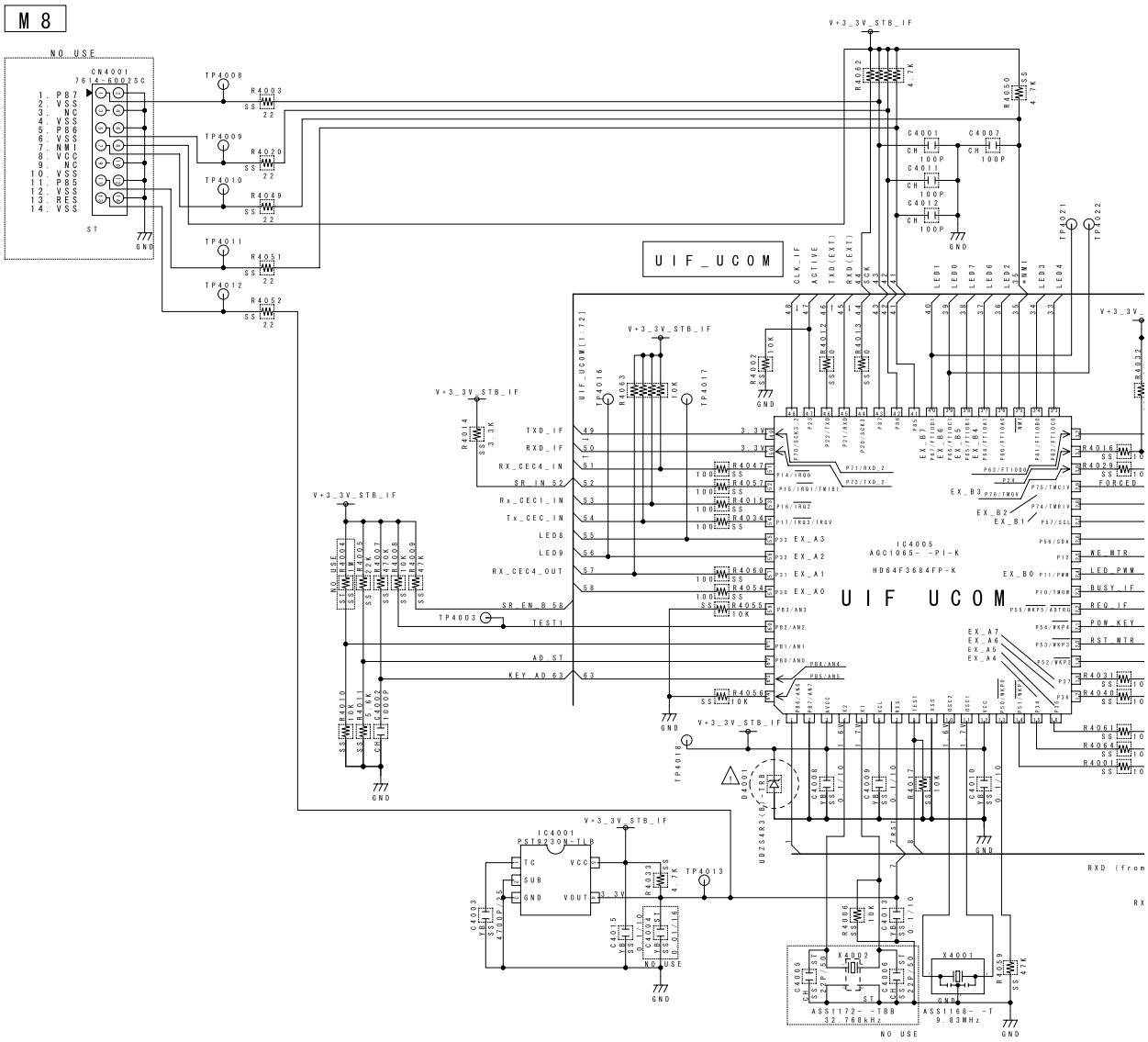
	USED	VACANT
C	3501-3517	
IC	3501	
R	3501-3541, 3570	3510-3512, 3531-3535



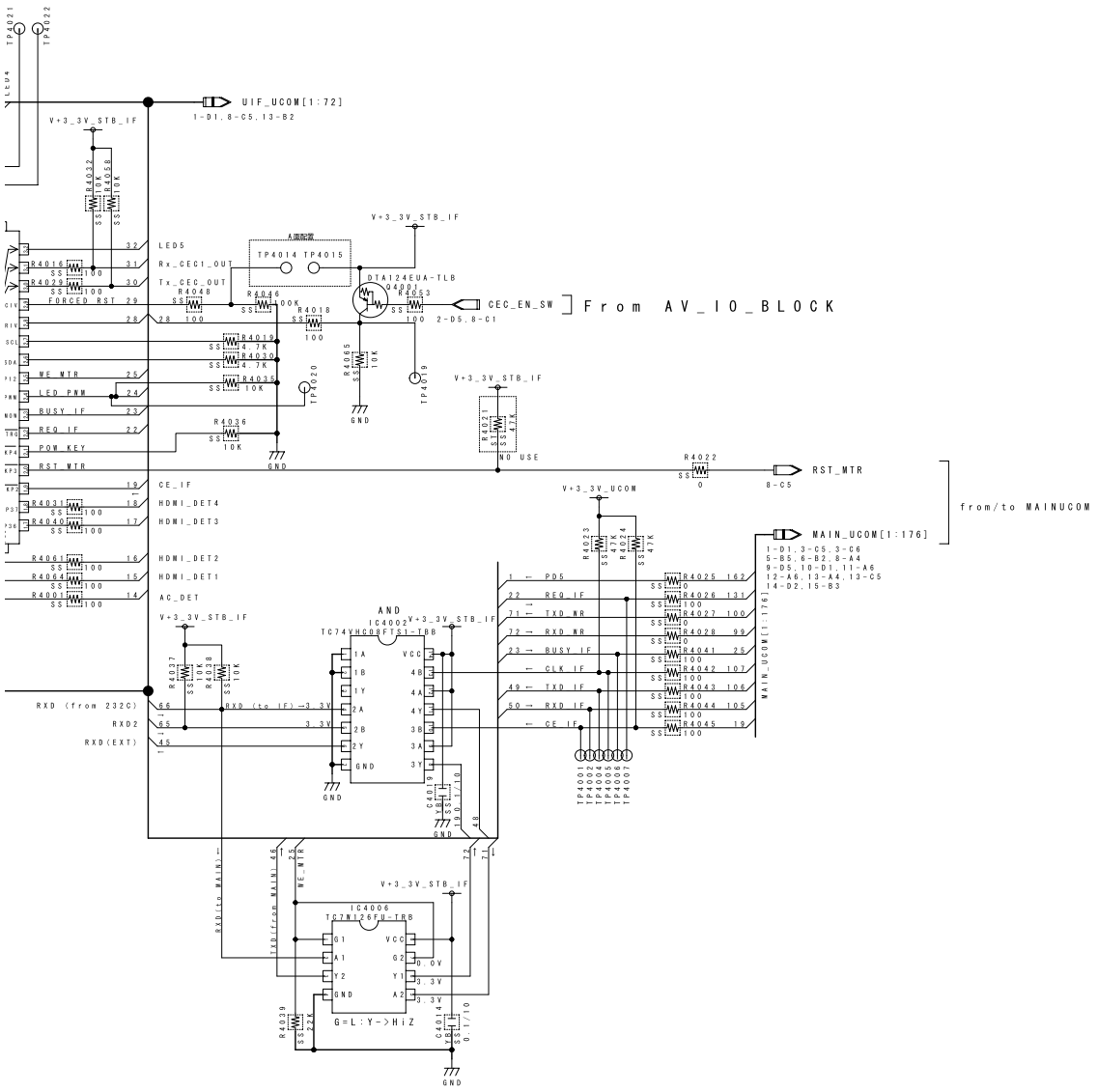
MAIN ASS'Y (06/15)
ADC BLOCK

AWV2520- :A6V2520

10.7 MAIN ASSY (7/15) IF UCOM BLOCK



	USED	VACANT
C	4001-4015, 4019	4004-4006
CN	4001	4001
D	4001	
IC	4001, 4002, 4005, 4006	
Q	4001	
R	4001-4065	4004, 4021
TP	4001-4022	
X	4001, 4002	4002

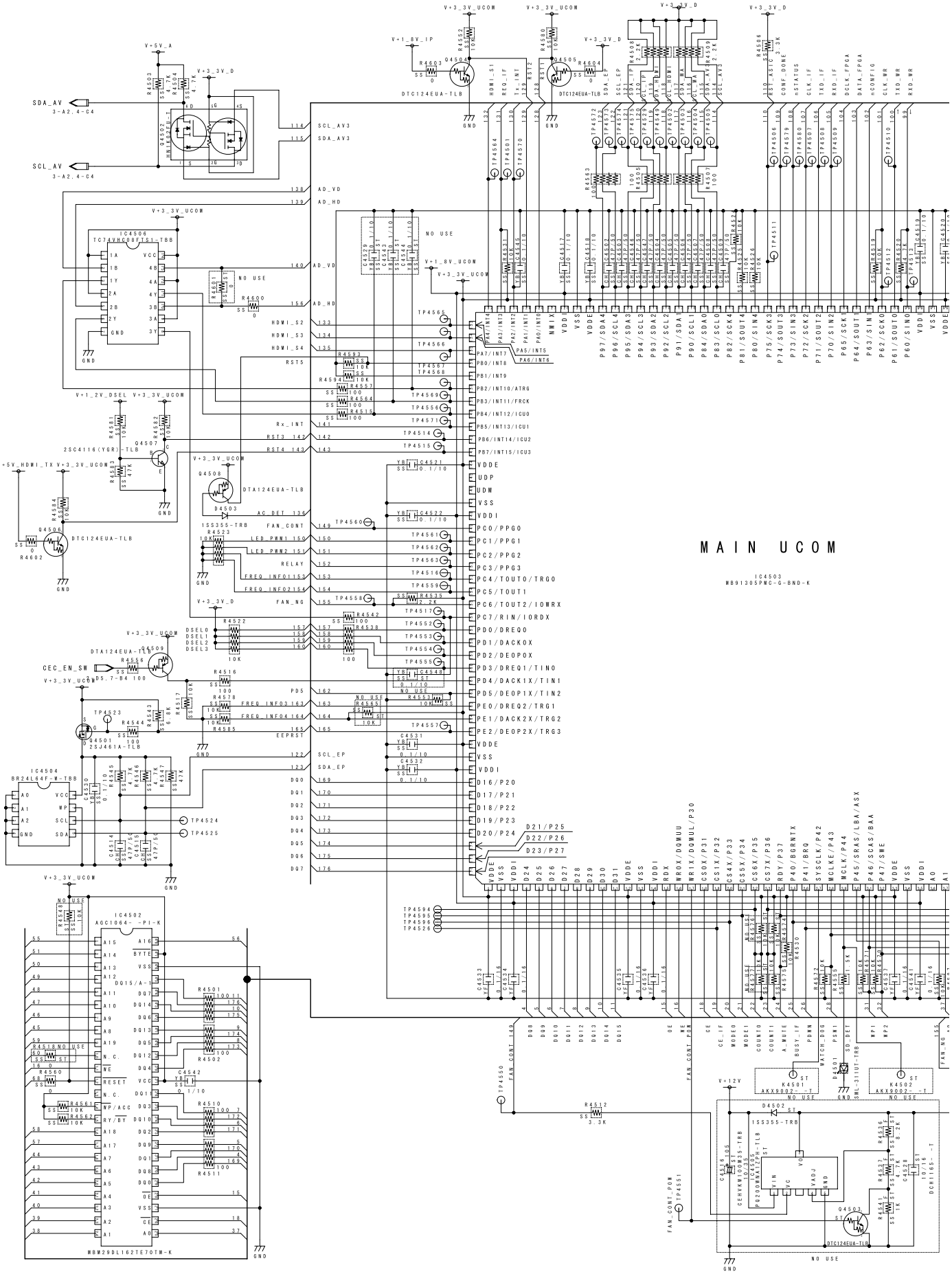


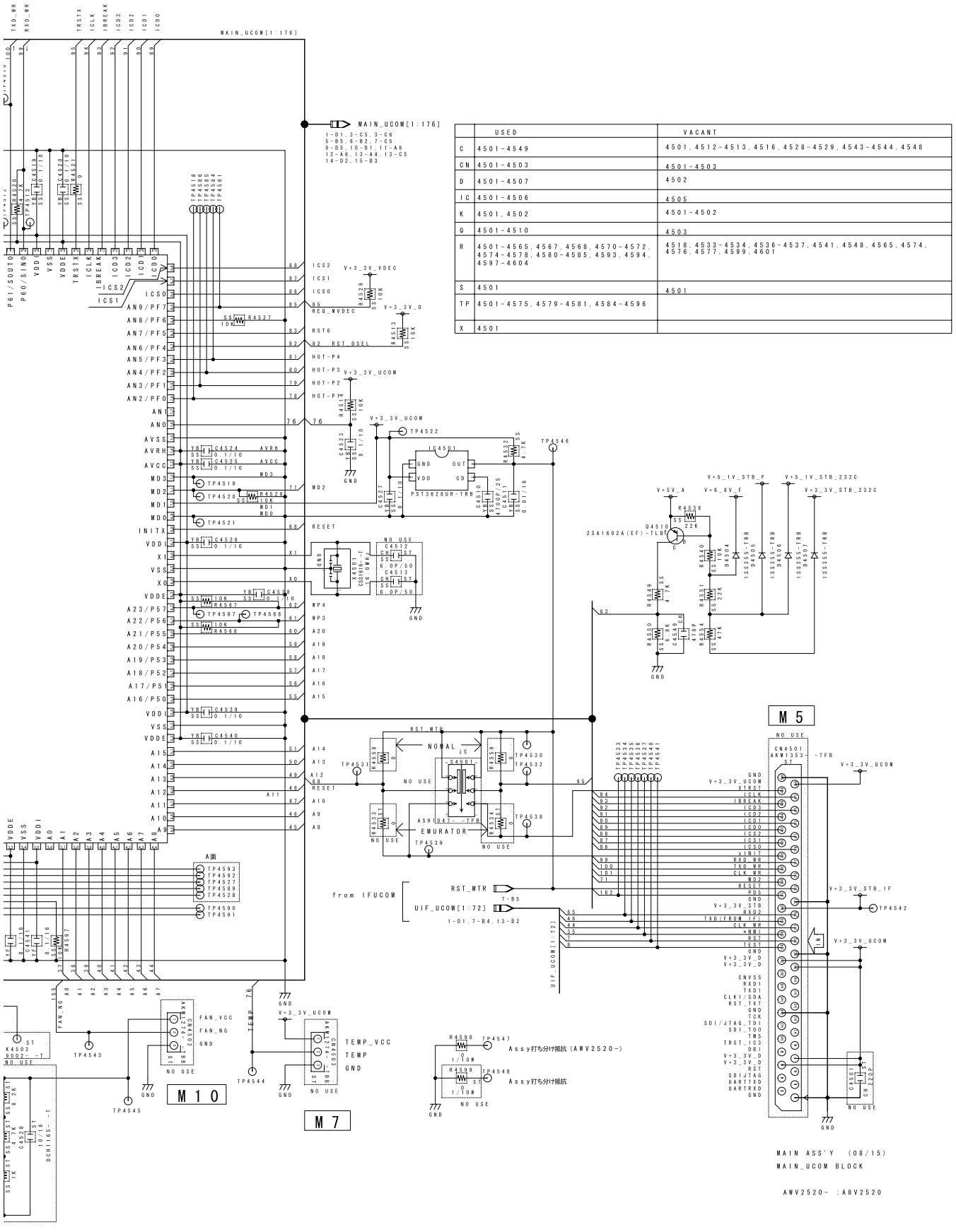
The ⚠ mark found on some component parts should be replaced with same parts(safety regulation authorized) of identical designation.

MAIN ASS'Y (07/15)
IF_UCOM BLOCK

AWV2520- :A7V2520

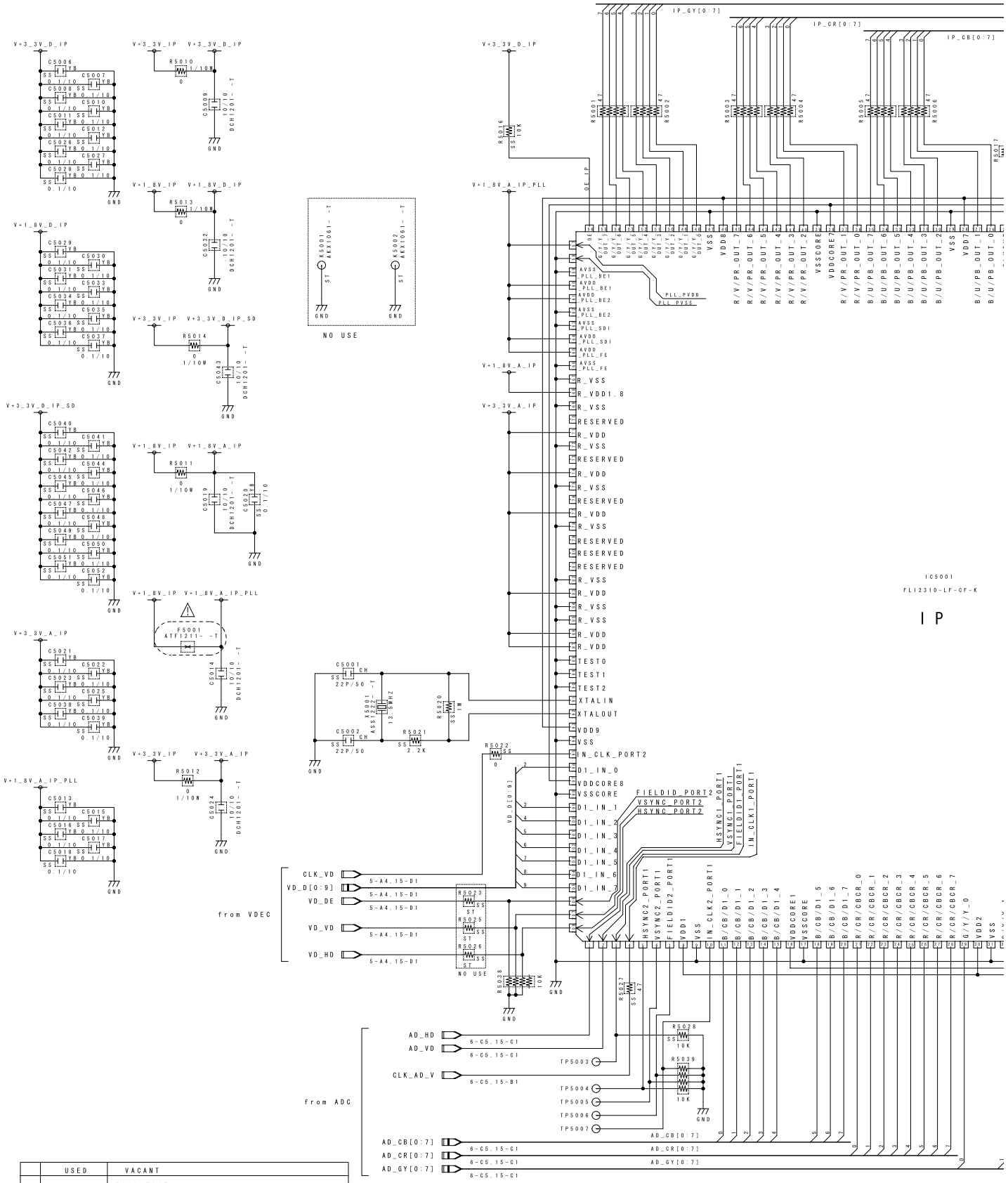
10.8 MAIN ASSY (8/15) MAIN UCOM BLOCK DIA.



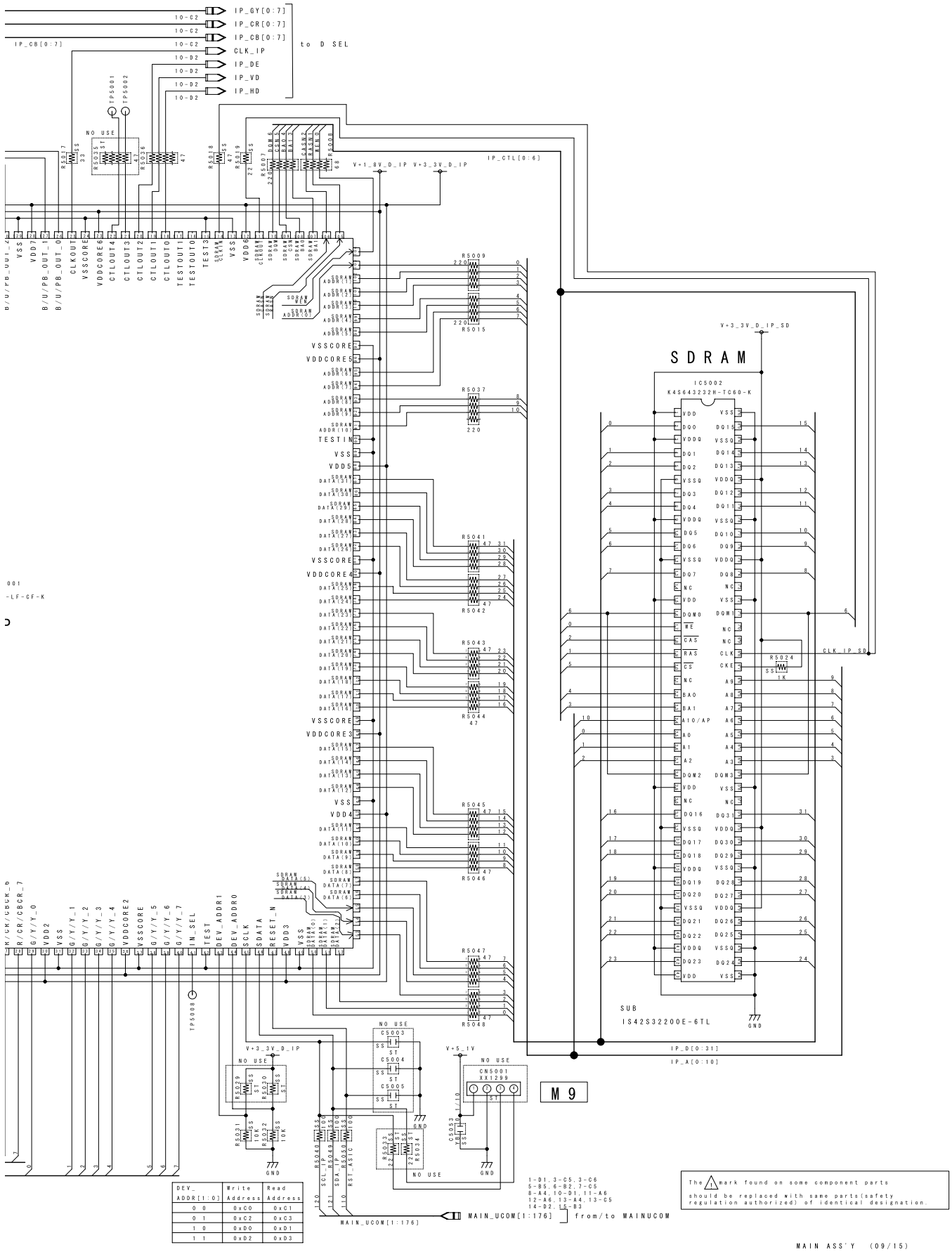


	USED	VACANT
C	4501-4549	4501, 4512-4513, 4516, 4528-4529, 4543-4544, 4548
CN	4501-4503	4501-4503
D	4501-4507	4502
IC	4501-4506	4505
K	4501, 4502	4501-4502
Q	4501-4510	4503
R	4501-4565, 4567, 4568, 4570-4572, 4574-4578, 4580-4585, 4593, 4594, 4597-4604	4518, 4533-4534, 4536-4537, 4541, 4548, 4565, 4574, 4576, 4577, 4599, 4601
S	4501	4501
TP	4501-4575, 4579-4581, 4584-4596	
X	4501	

10.9 MAIN ASSY (9/15) IP BLOCK



	USED	VACANT
C	5001-5053	5003-5005
CN	5001	5001
F	5001	
IC	5001, 5002	
K	5001, 5002	5001, 5002
R	5001-5050	5023, 5025-5026, 5029-5030, 5033-5035
TP	5001-5008	
X	5001	



DEV_ ADDR[1:0]	Write Address	Read Address
0 0	0xC0	0xC1
0 1	0xC2	0xC3
1 0	0xD0	0xD1
1 1	0xD2	0xD3

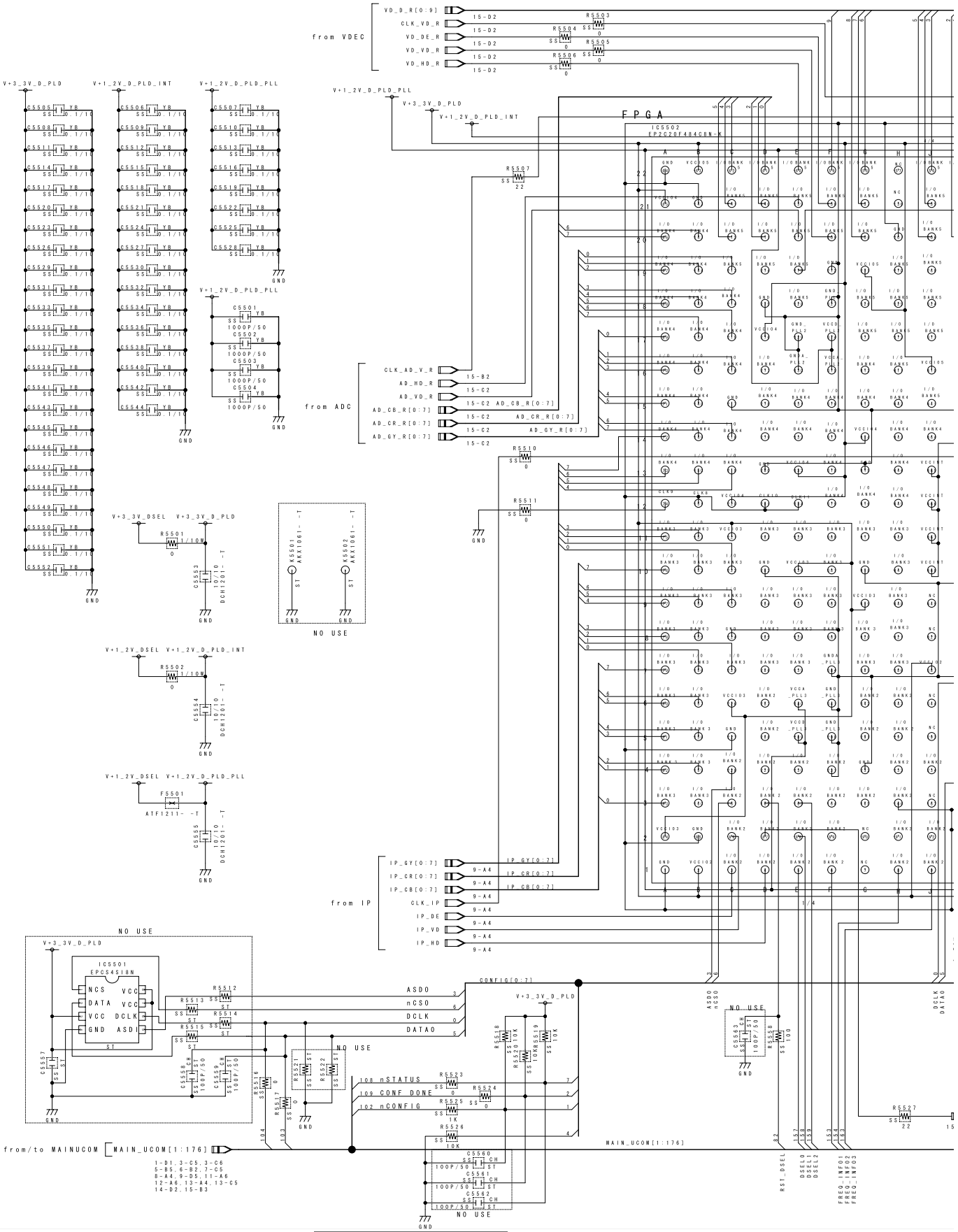
1-D1, 3-C5, 3-C6
5-B5, 6-B2, 7-C5
8-A4, 10-D1, 11-A6
12-A6, 13-A4, 13-C5
14-D2, 15-B3

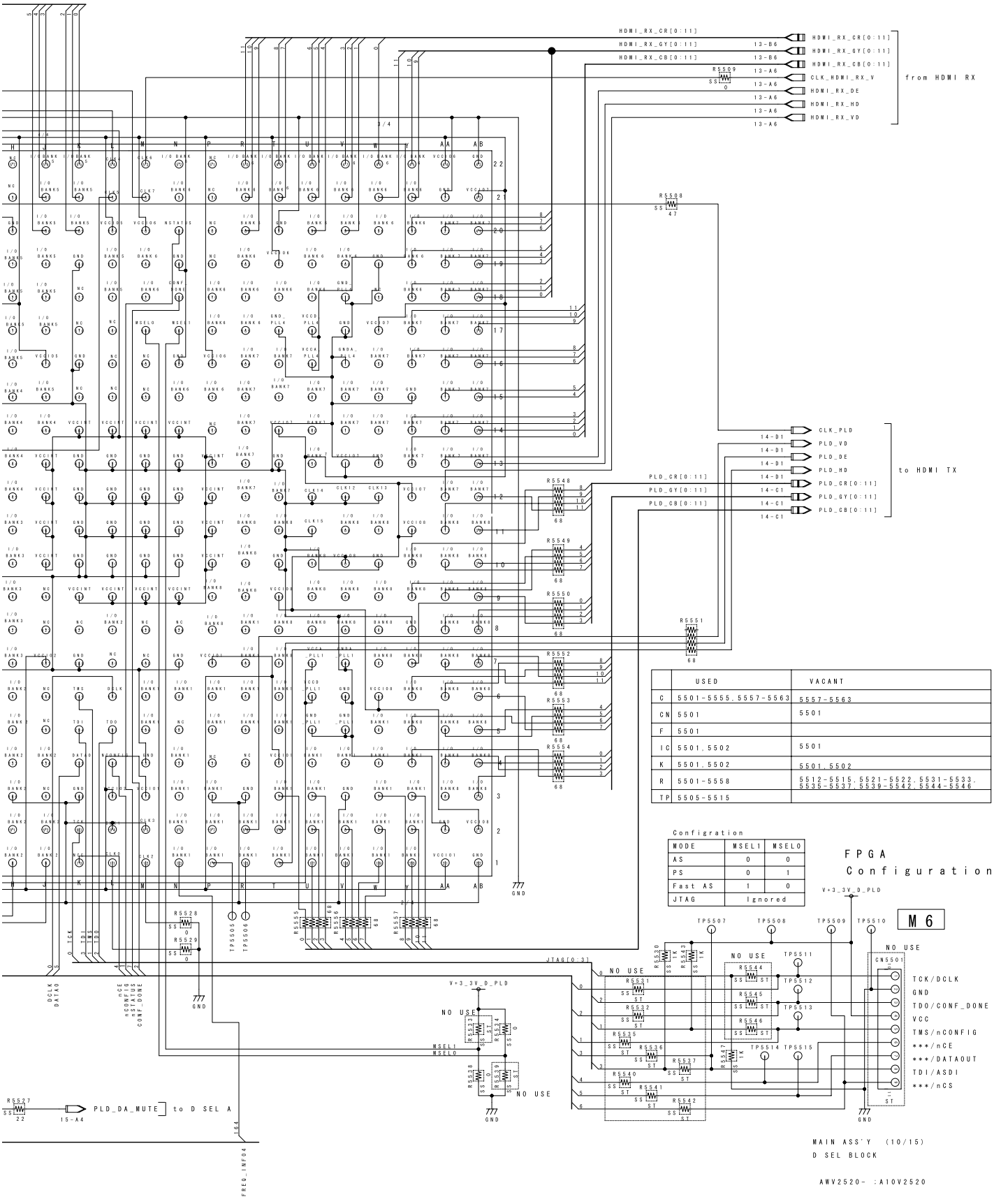
The ⚠ mark found on some component parts should be replaced with same parts(safety regulation authorized) of identical designation.

MAIN ASS'Y (09/15)
IP BLOCK

AWV2520- :A9V2520

10.10 MAIN ASSY (10/15) DSEL BLOCK





	USED	VACANT
C	5501-5555, 5557-5563	5557-5563
CN	5501	5501
F	5501	
IC	5501, 5502	5501
K	5501, 5502	5501, 5502
R	5501-5558	5512-5515, 5521-5522, 5531-5533, 5535-5537, 5539-5542, 5544-5546
TP	5505-5515	

Configration

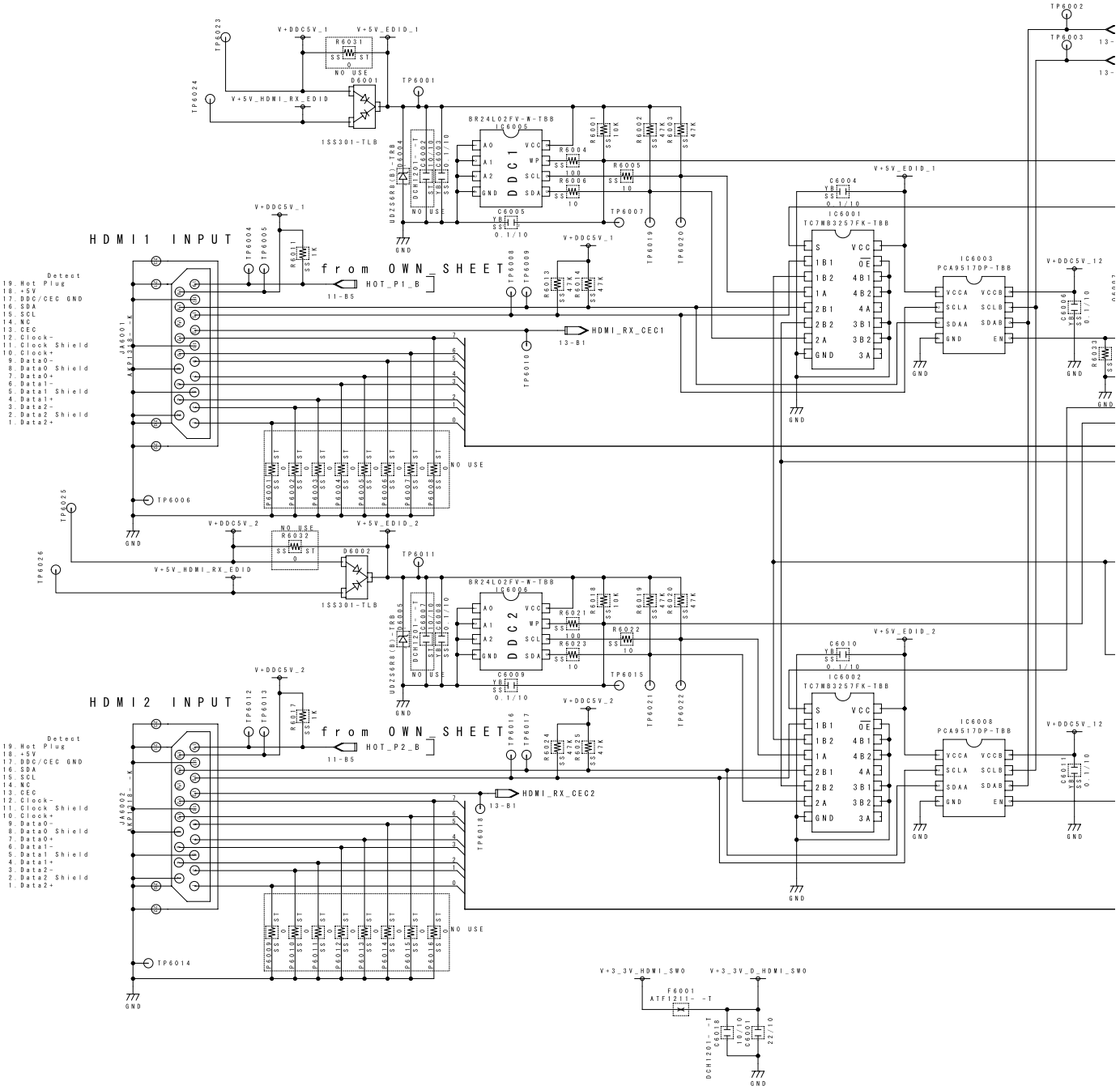
MODE	MSEL1	MSEL0
AS	0	0
PS	0	1
Fast AS	1	0
JTAG	Ignored	

FPGA Configuration

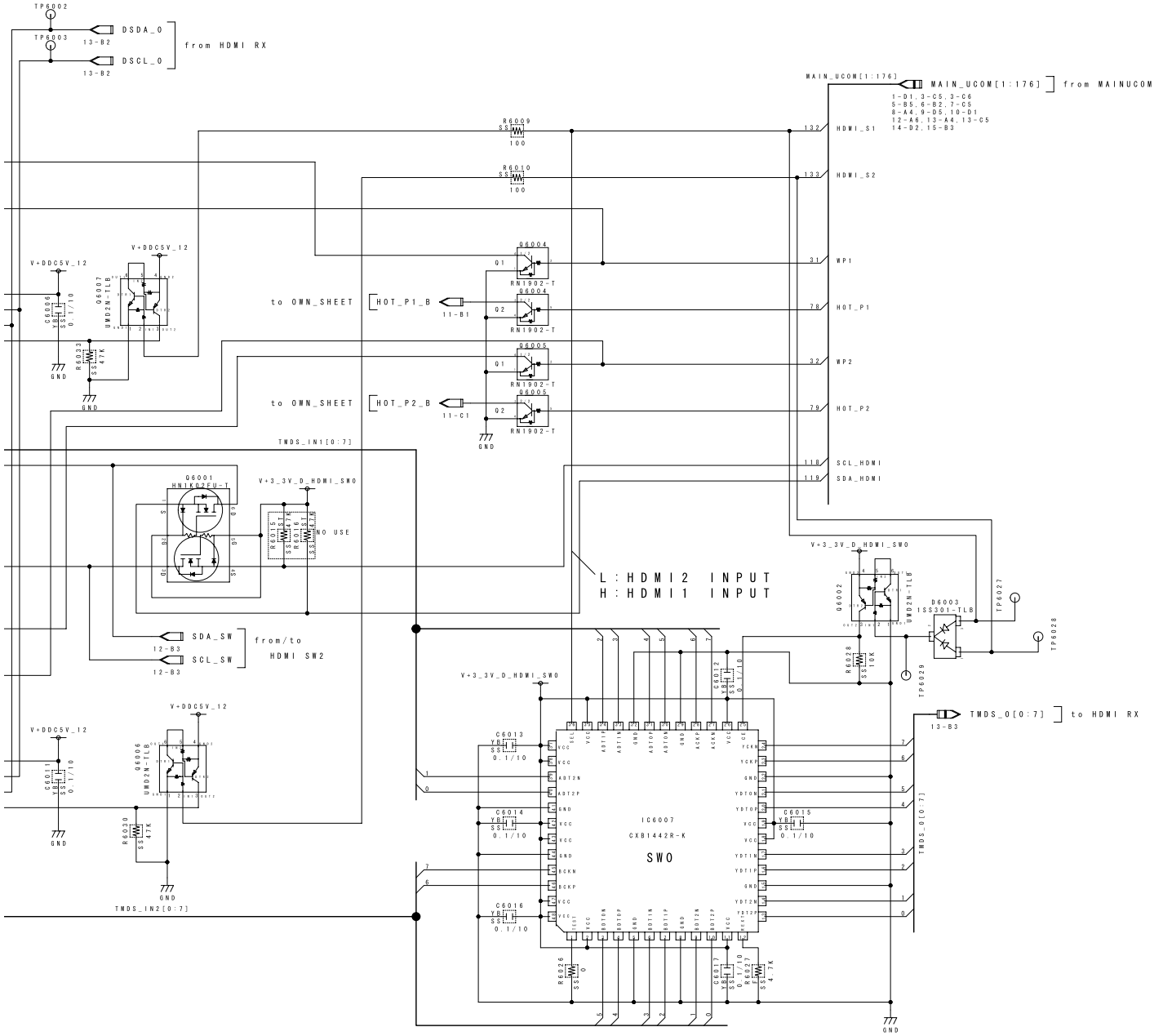
MAIN ASS'Y (10/15)
D SEL BLOCK

AWV2520- : A10V2520

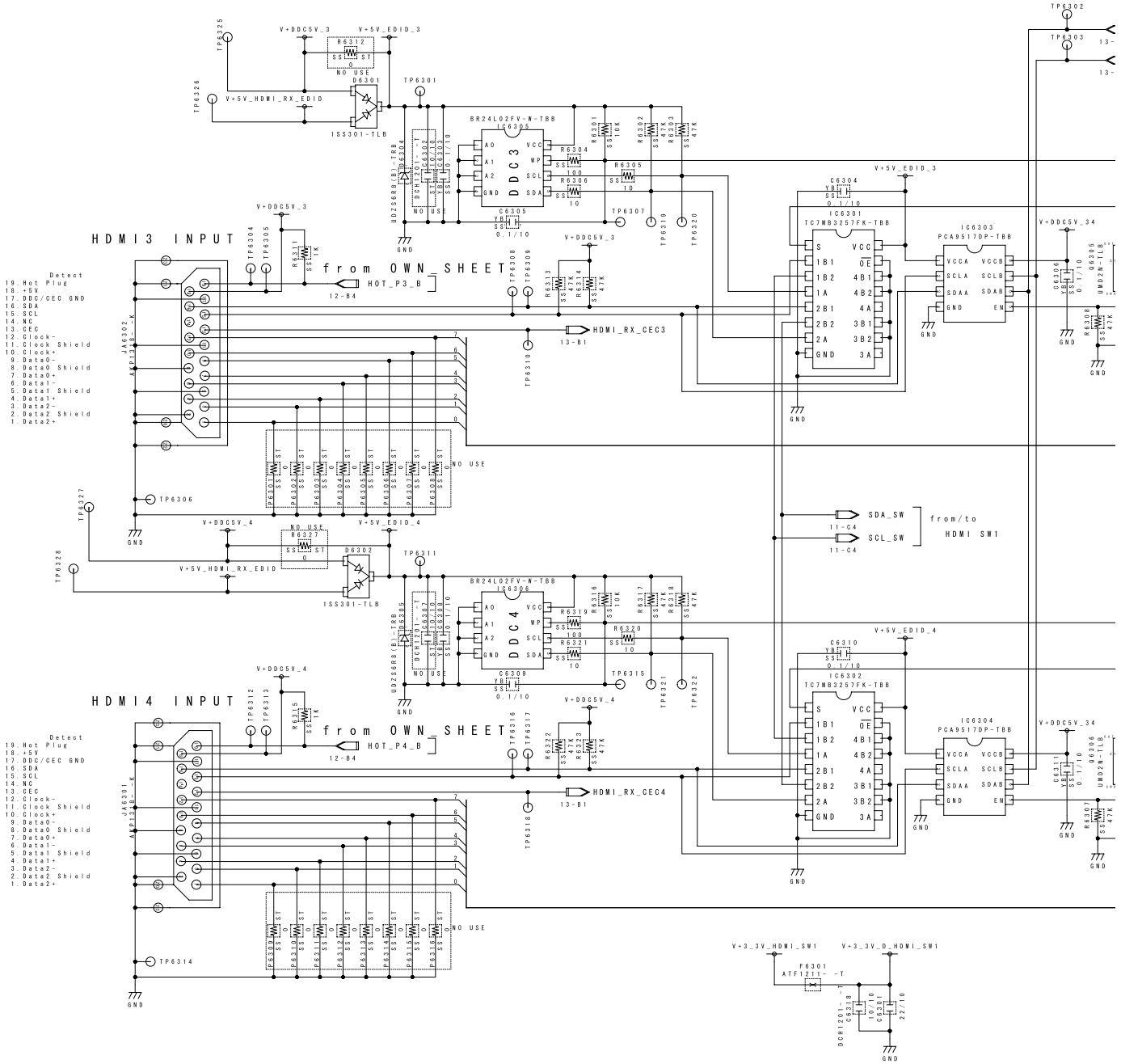
10.11 MAIN ASSY (11/15) HDMI SW1 BLOCK



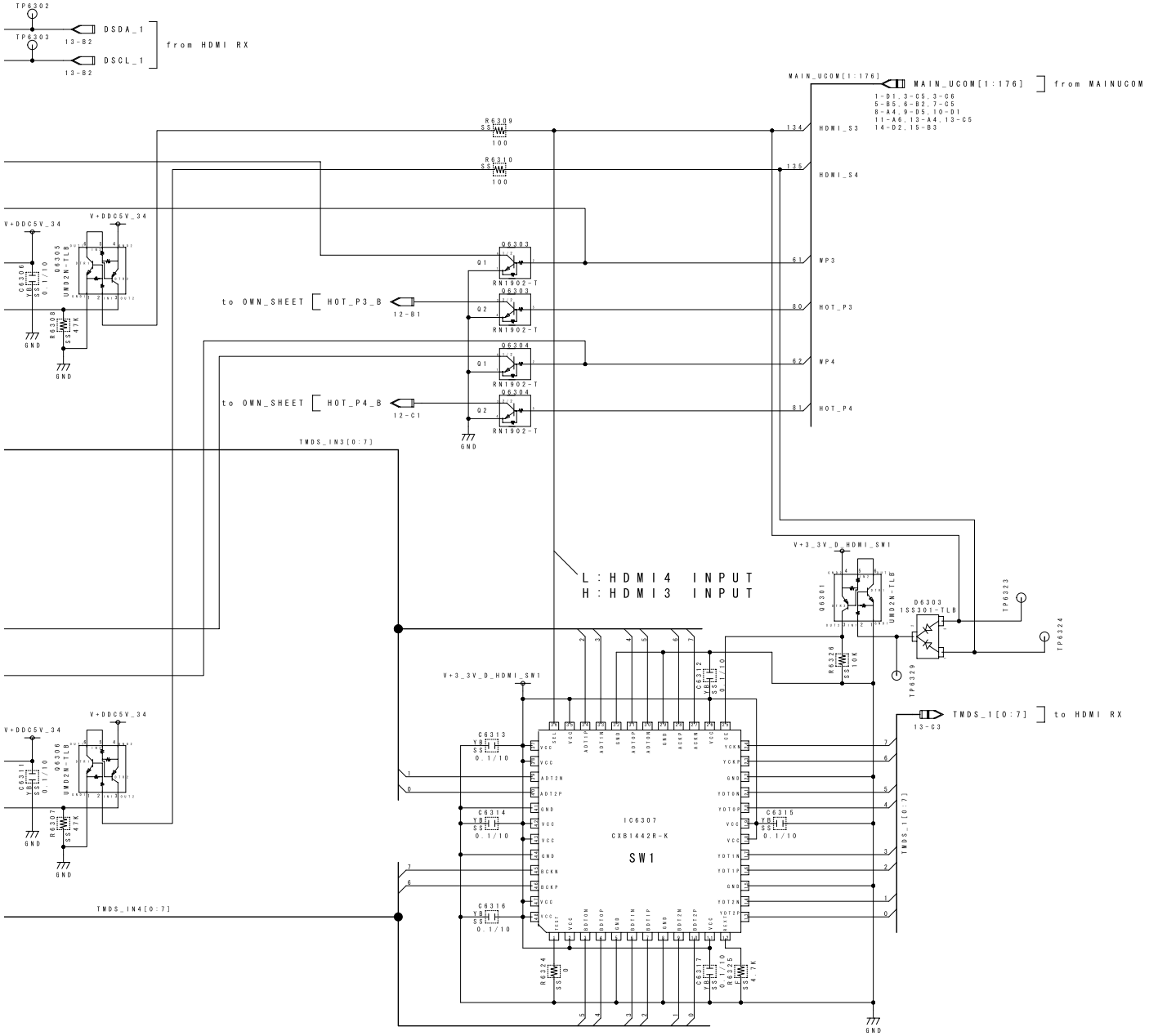
	USED	VACANT
C	6001-6018	6002, 6007
D	6001-6005	
F	6001	
IC	6001-6003, 6005-6008	
JA	6001, 6002	
P	6001-6016	6001-6016
Q	6001, 6002, 6004-6007	
R	6001-6006, 6009-6011 6013-6028, 6030-6033	6015-6016, 6031-6032
TP	6001-6029	


TP6002
TP6003
DSDA_0
DSCL_0
13-B2
from HDMI RX
MAIN_UCOM[1:176]
MAIN_UCOM[1:176] from MAINUCOM
1-D1,3-C5,3-C6
5-B5,6-B2,7-C5
8-A4,9-D5,10-D1
12-A6,13-A4,13-C5
14-D2,15-B3
R6009 SS 100
R6010 SS 100
132 HDMI_S1
133 HDMI_S2
V+DDC5V_12
Q6007 UMD2N-TLB
C6006 SS 0.1/10
R6023 SS 47K
GND
Q6004 RN1902-T
Q6005 RN1902-T
to OWN_SHEET
HOT_P1_B
11-B1
HOT_P2_B
11-C1
31 WP1
78 HOT_P1
32 WP2
79 HOT_P2
TMDS_IN1[0:7]
Q6001 HN1K02FU-T
V+3_3V_D_HDMI_SWO
R6015 SS 47K
R6016 SS 47K
R6017 SS 47K
NO USE
118 SCL_HDMI
119 SDA_HDMI
L : HDMI2 INPUT
H : HDMI1 INPUT
Q6002 UMD2N-TLE
D6003 ISS301-TLB
TP6027
TP6028
TP6029
R6028 SS 10K
SDA_SW
SCL_SW
12-B3
from/to HDMI SW2
C6012 YB SS 0.1/10
TMDS_O[0:7]
to HDMI RX
13-B3
C6013 YB SS 0.1/10
C6014 YB SS 0.1/10
C6015 YB SS 0.1/10
C6016 YB SS 0.1/10
IC6007
CXB1442R-K
SWO
C6017 YB SS 0.1/10
R6026 SS 0
R6027 SS 47K
C6011 SS 0.1/10
Q6006 UMD2N-TLE
R6030 SS 47K
TMDS_IN2[0:7]
MAIN ASS'Y (11/15)
HDMI SW1 BLOCK
AWV2520- :A11V2520

10.12 MAIN ASSY (12/15) HDMI SW2 BLOCK



	USED	VACANT
C	6301-6318	6302, 6307
D	6301-6305	
F	6301	
IC	6301-6307	
JA	6301, 6302	
P	6301-6316	6301-6316
Q	6301, 6303-6306	
R	6301-6327	6312, 6327
TP	6301-6329	

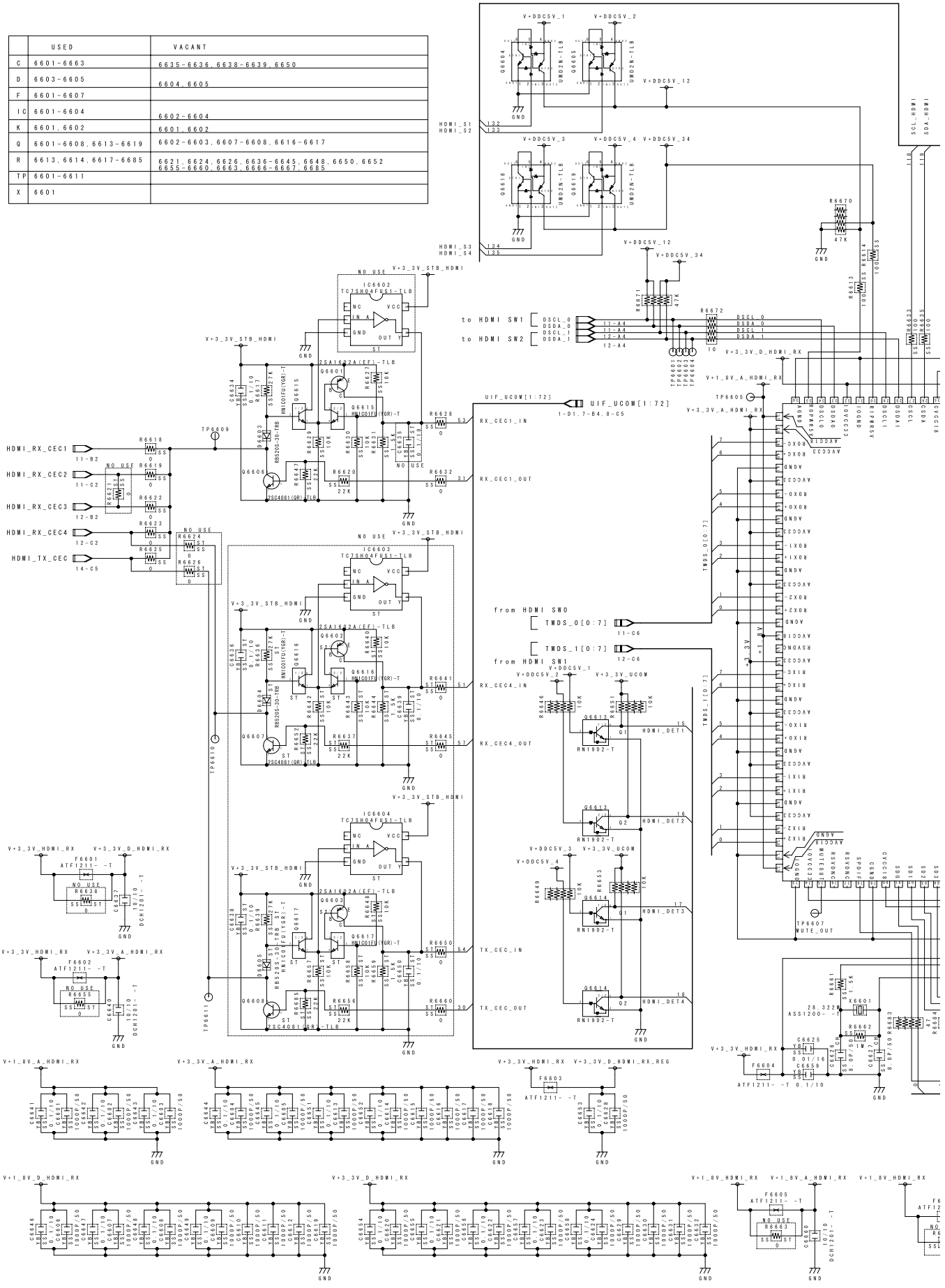


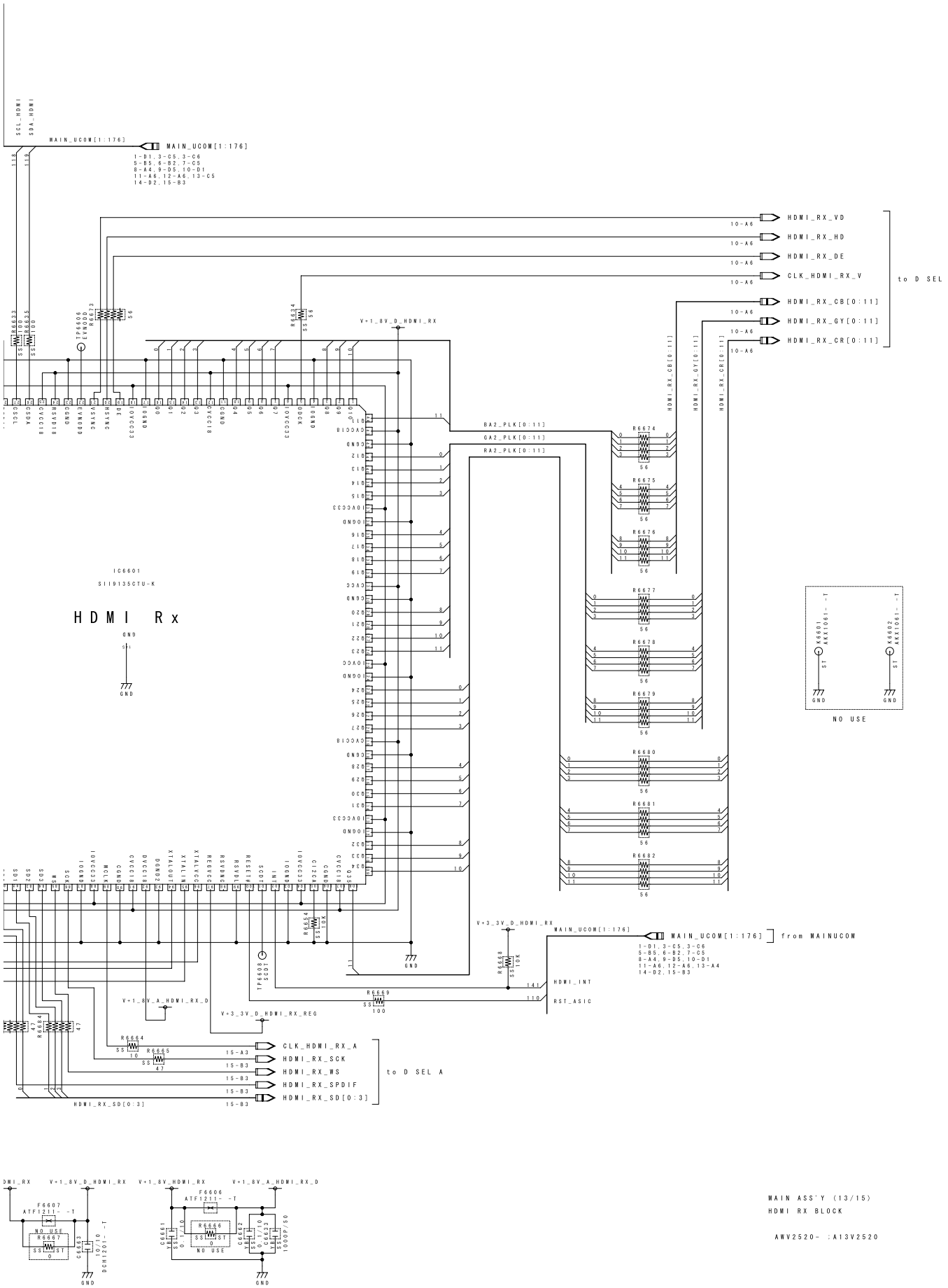
MAIN ASS'Y (12/15)
HDMI SW2 BLOCK

AWV2520- :A12V2520

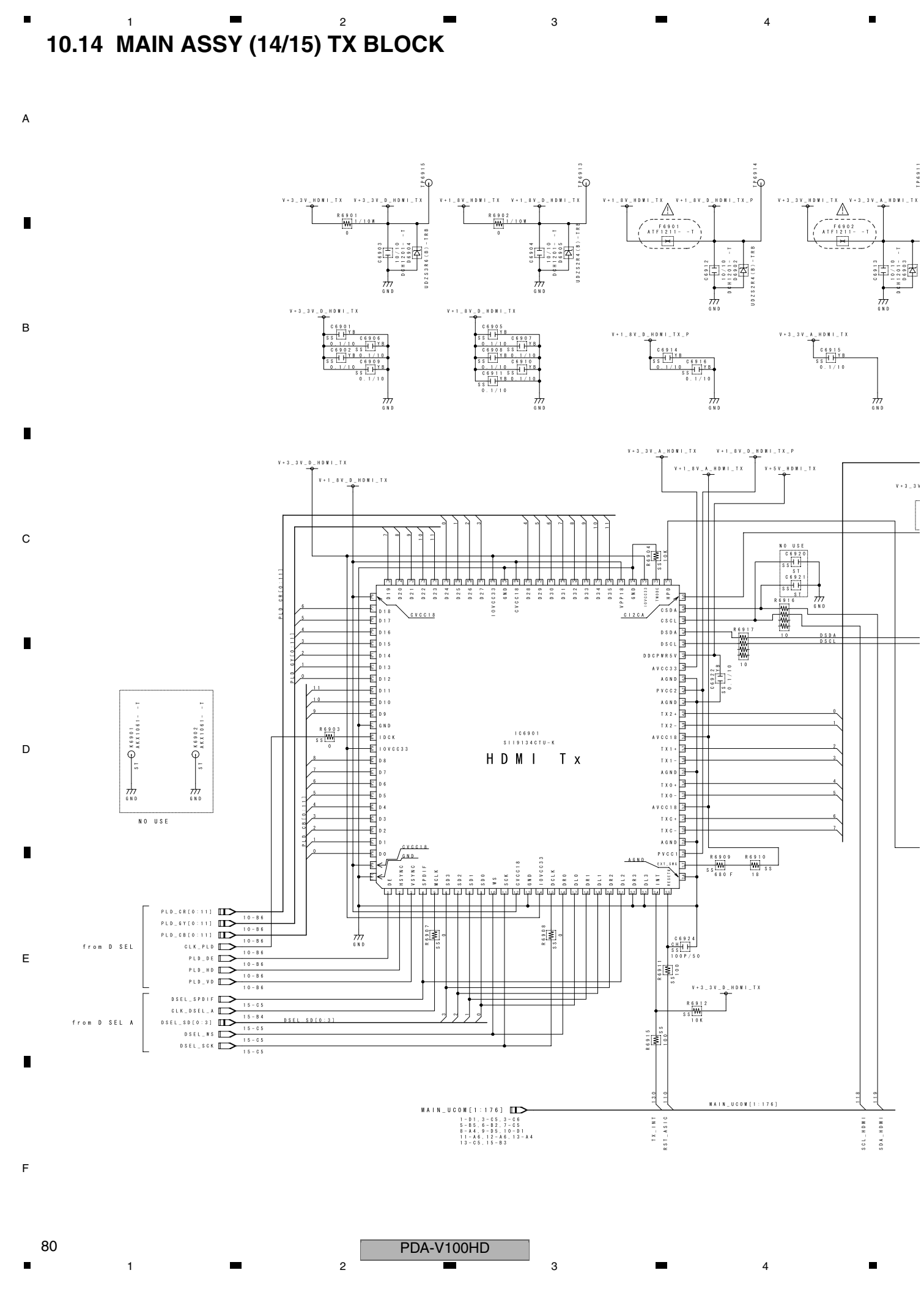
10.13 MAIN ASSY (13/15) RX BLOCK

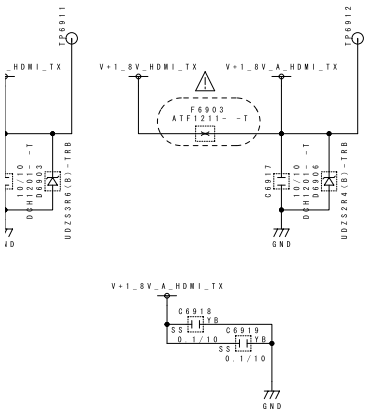
	USED	VACANT
C	6601-6663	6635-6636, 6638-6639, 6650
D	6603-6605	6604, 6605
F	6601-6607	
IC	6601-6604	6602-6604
K	6601, 6602	6601, 6602
Q	6601-6608, 6613-6619	6602-6603, 6607-6608, 6616-6617
R	6613, 6614, 6617-6685	6621, 6624, 6626, 6636-6645, 6648, 6650, 6652 6655-6660, 6663, 6666-6667, 6685
TP	6601-6611	
X	6601	



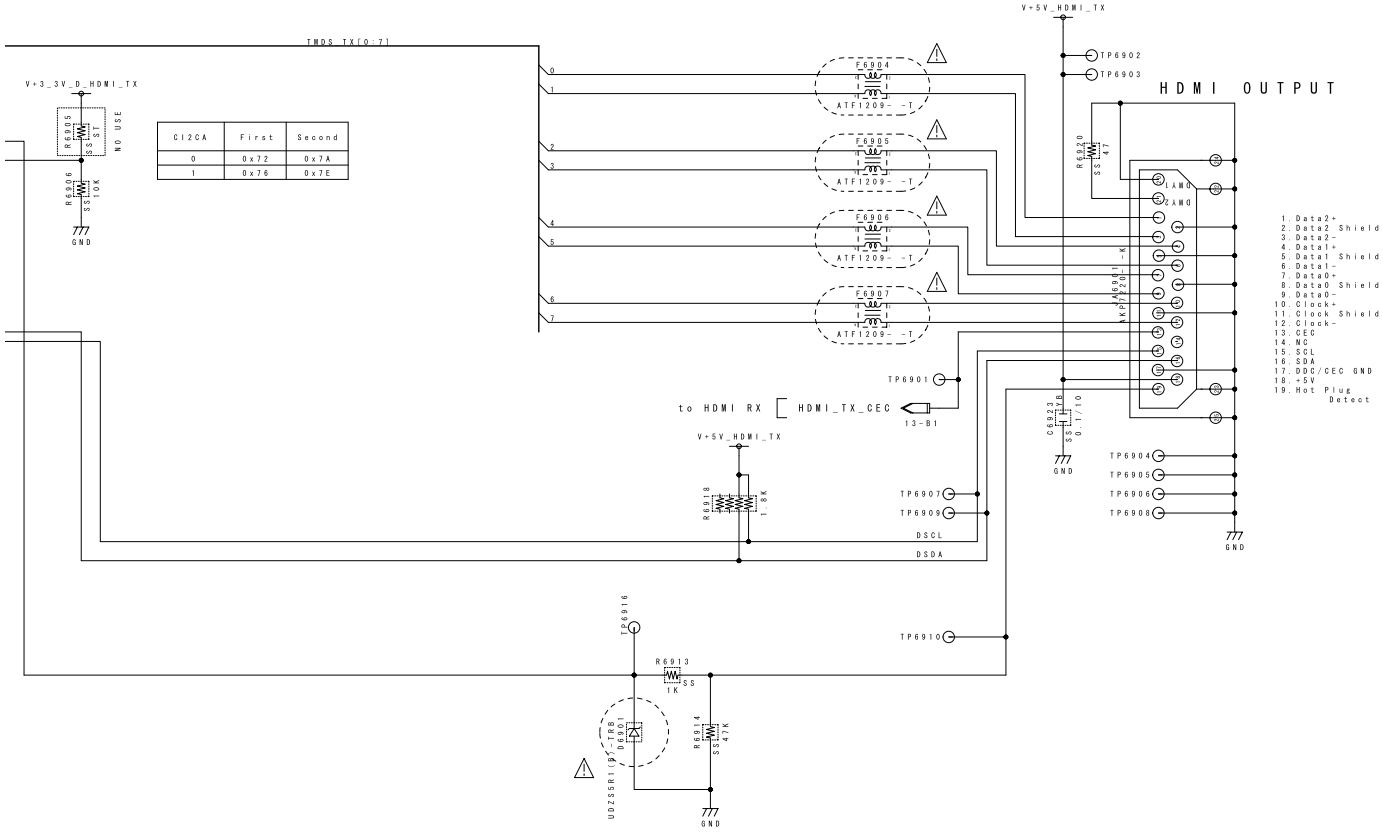

HDMI Rx
IC6601
SII9135CTU-K
MAIN_UCOM[1:176]
HDMI_RX_VD
HDMI_RX_HD
HDMI_RX_DE
CLK_HDMI_RX_V
HDMI_RX_CB[0:11]
HDMI_RX_GY[0:11]
HDMI_RX_CR[0:11]
to D SEL
V+1_8V_D_HDMI_RX
BA2_PLK[0:11]
GA2_PLK[0:11]
RA2_PLK[0:11]
NO USE
V+3_3V_D_HDMI_RX
from MAINUCOM
HDMI_INT
RST_ASIC
V+1_8V_A_HDMI_RX_D
V+3_3V_D_HDMI_RX_REG
CLK_HDMI_RX_A
HDMI_RX_SCK
HDMI_RX_WS
HDMI_RX_SPDIF
HDMI_RX_SD[0:3]
to D SEL A
MAIN ASSY (13/15)
HDMI RX BLOCK
AWV2520- :A13V2520

10.14 MAIN ASSY (14/15) TX BLOCK





	USED	VACANT
C	6901-6924	6920, 6921
D	6901-6906	
F	6901-6907	
IC	6901	
JA	6901	
K	6901, 6902	6901, 6902
R	6901-6918, 6920	6905
TP	6901-6916	



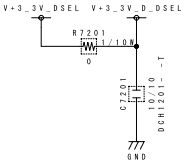
Cl2CA	First	Second
0	0x72	0x7A
1	0x76	0x7E

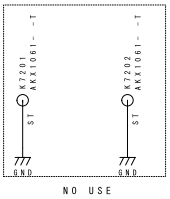
The ⚠ mark found on some component parts should be replaced with same parts(safety regulation authorized) of identical designation.

MAIN ASS'Y (14/15)
HDMI TX BLOCK

AWV2520- :A14V2520

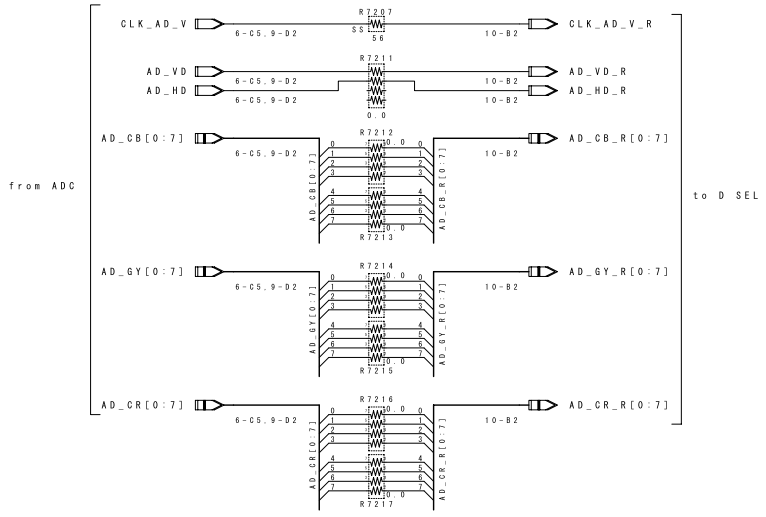
10.15 MAIN ASSY (15/15) DSEL A BLOCK

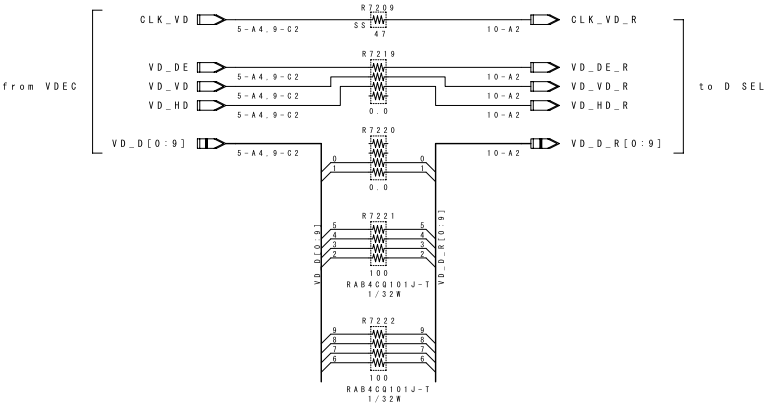




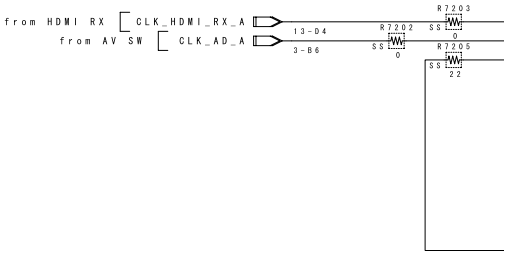
NO USE

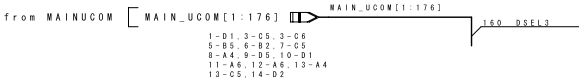
ADC/VDEC through

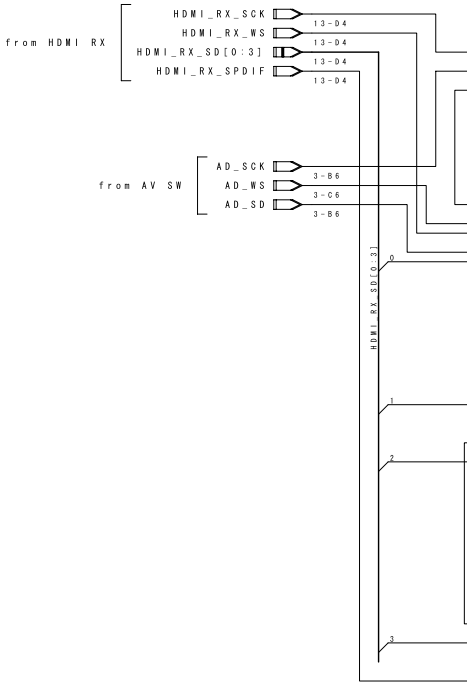




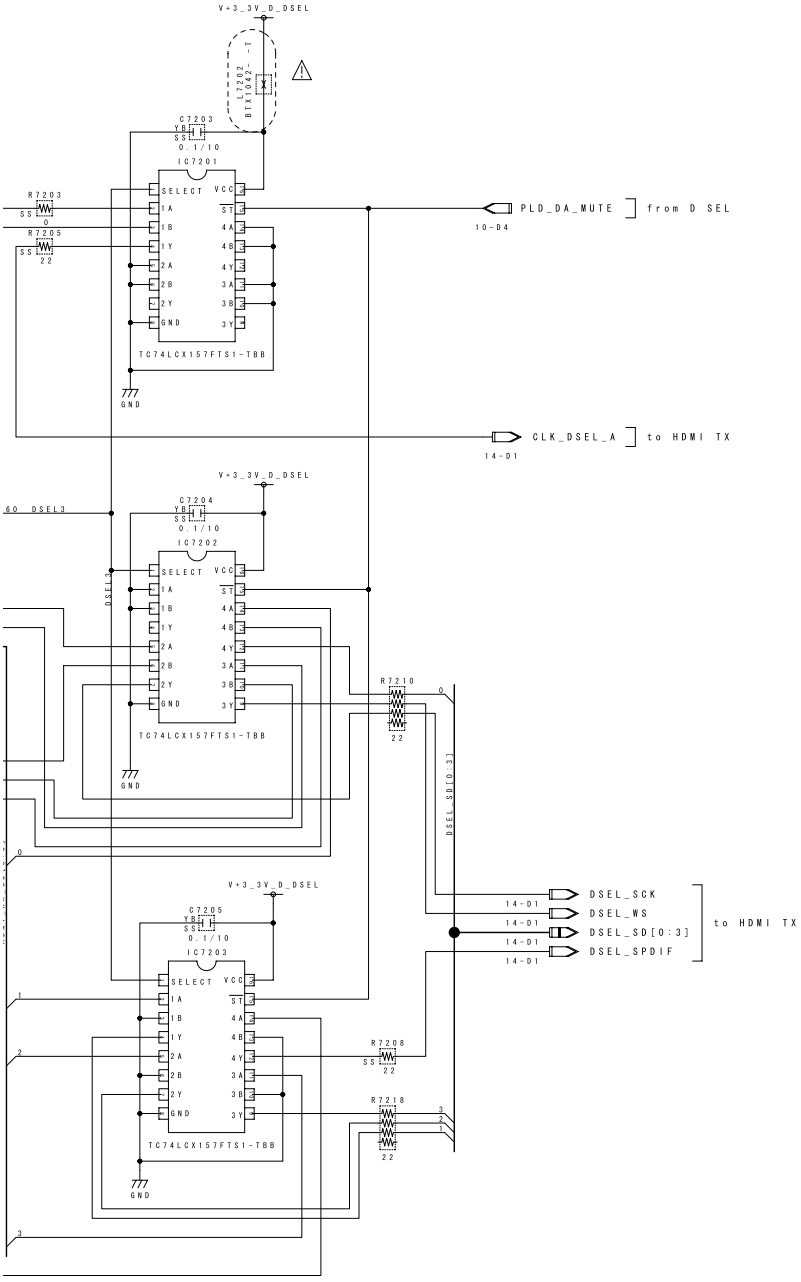
HDMI/







DMI/ADC AUDIO SELECT



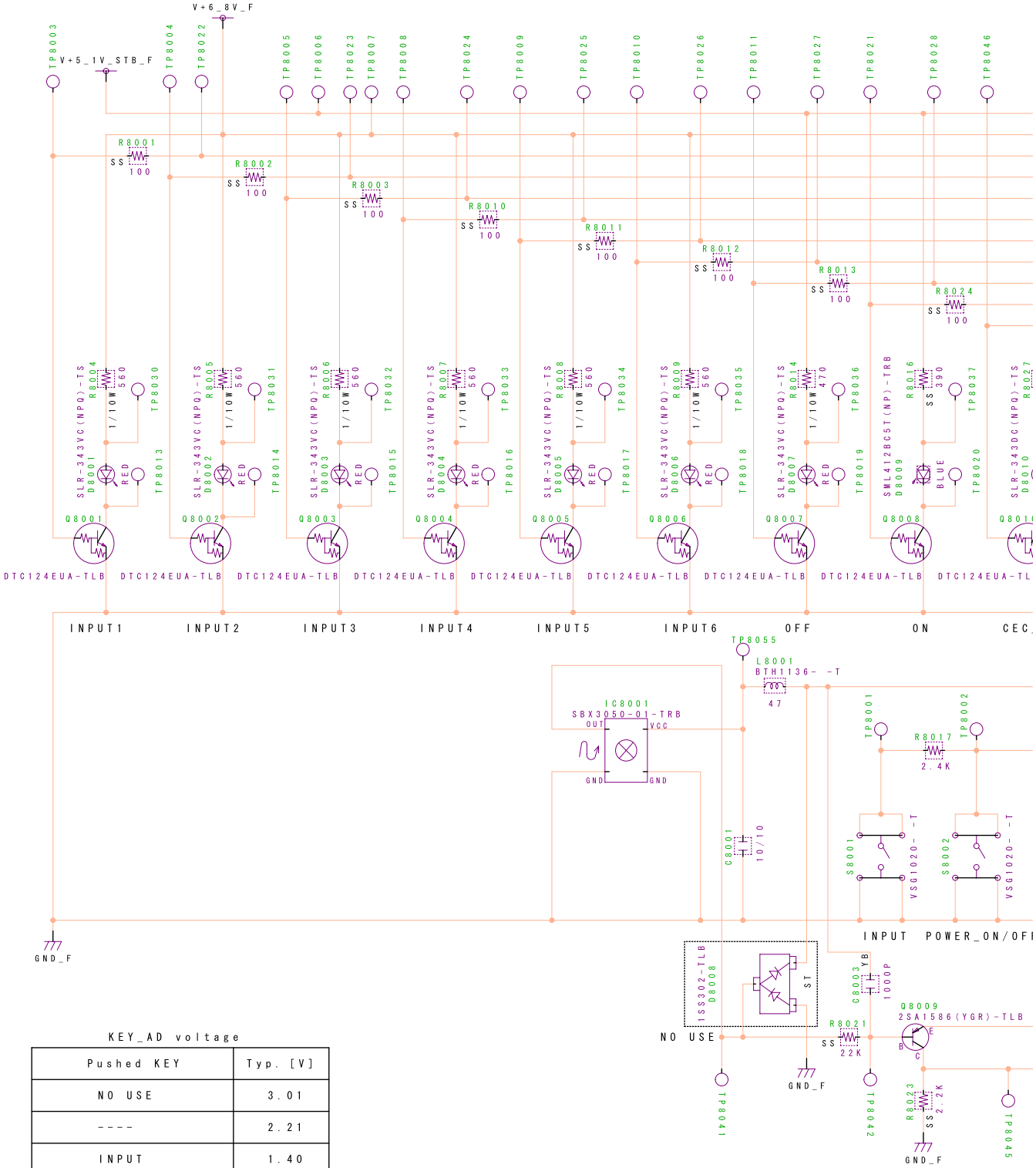
	USED	VACANT
C	7201, 7203-7205	
IC	7201-7203	
K	7201, 7202	7201, 7202
L	7202, 7202	
R	7201-7203, 7205, 7207-7222	

The ⚠ mark found on some component parts should be replaced with same parts(safety regulation authorized) of identical designation.

MAIN ASS'Y (15/15)
D SEL A BLOCK

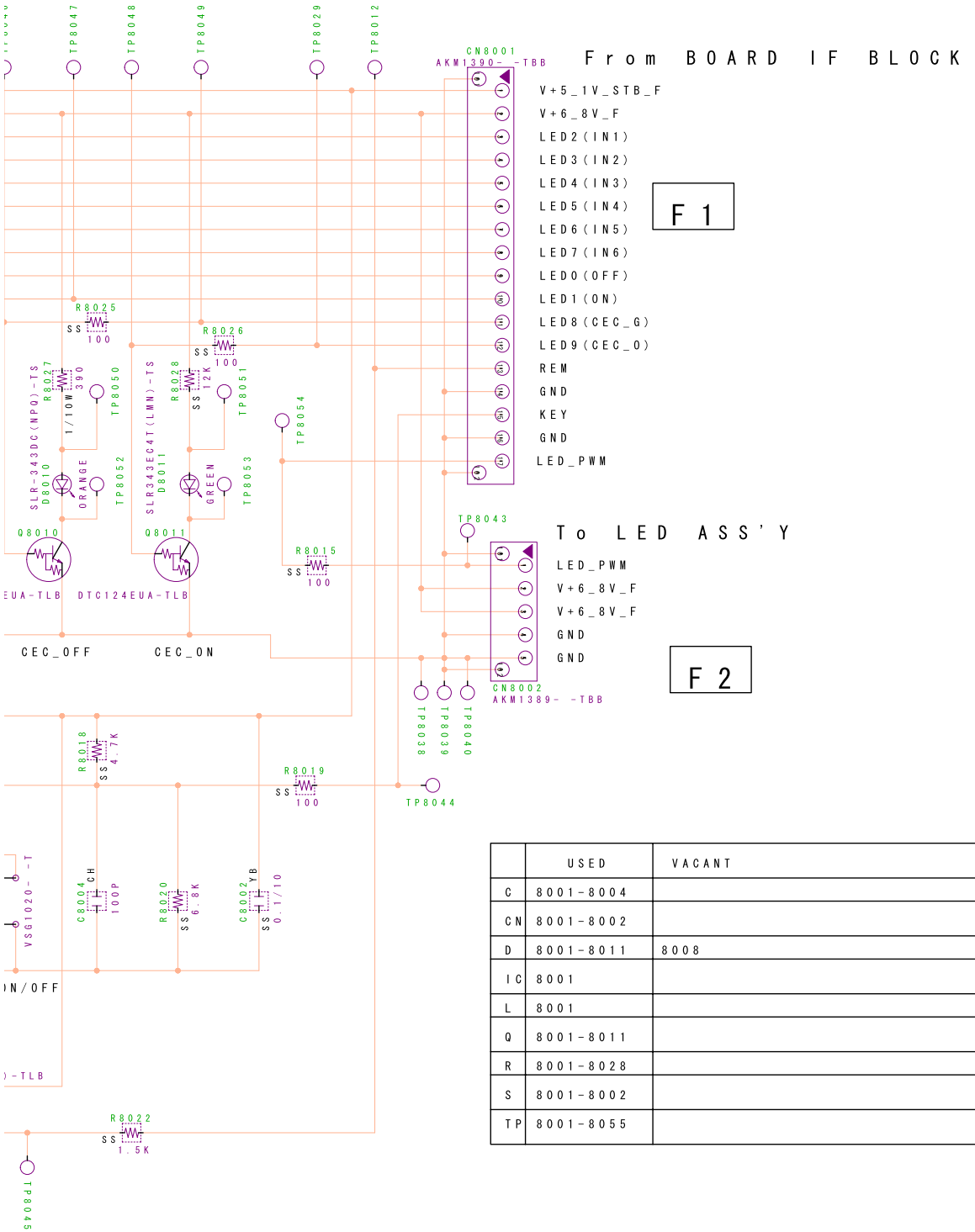
AWV2520- :A15V2520

10.16 FRONT ASSY



KEY_AD voltage

Pushed KEY	Typ. [V]
NO USE	3.01
----	2.21
INPUT	1.40
----	0.70
POWER_ON/OFF	0

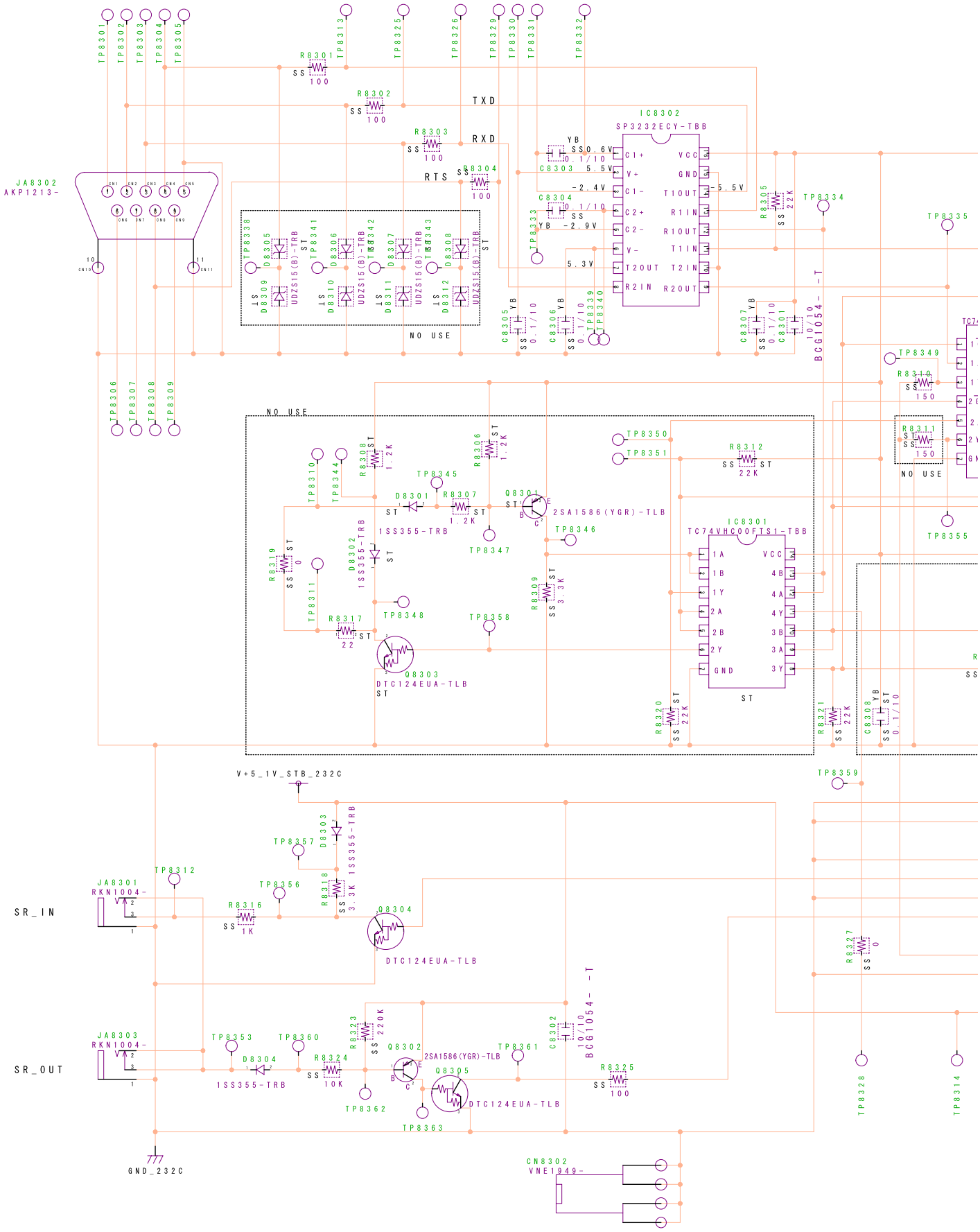


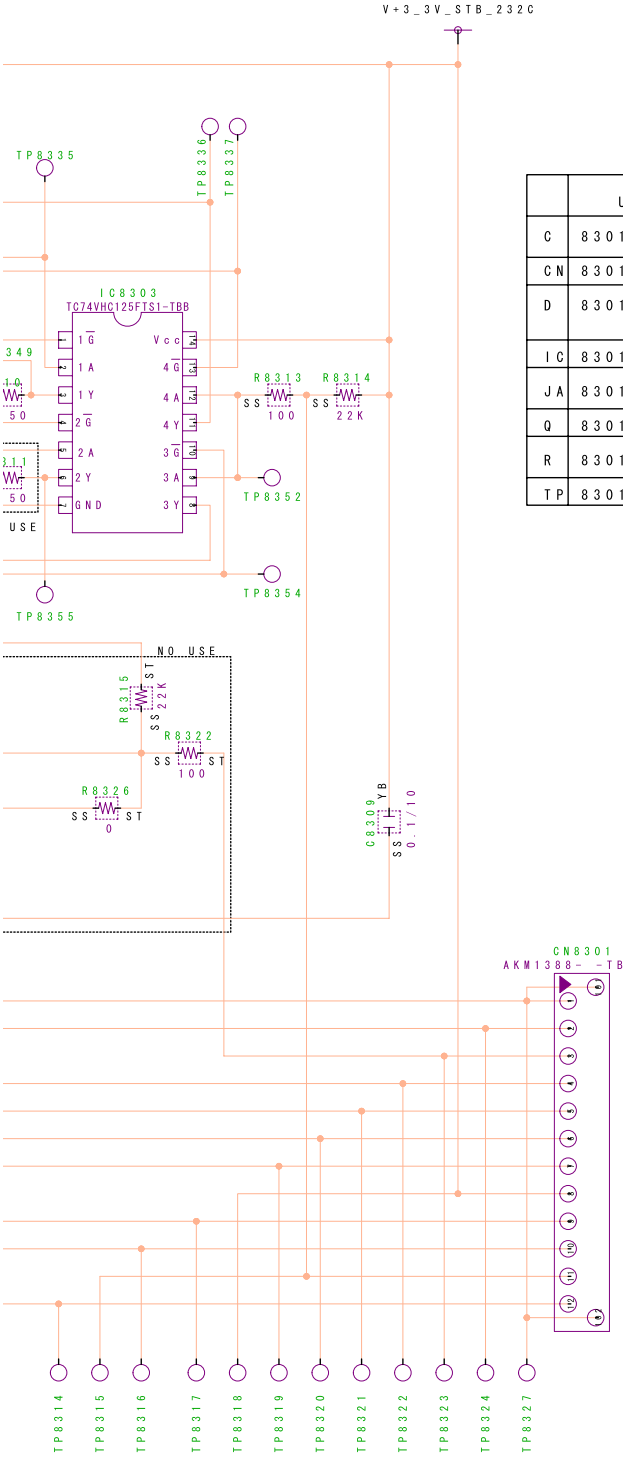
	USED	VACANT
C	8001-8004	
CN	8001-8002	
D	8001-8011	8008
IC	8001	
L	8001	
Q	8001-8011	
R	8001-8028	
S	8001-8002	
TP	8001-8055	

FRKUGOU ASS'Y (01/4)
FRONT ASS'Y

AWV2521- :AWW1296

10.17 232C ASSY





	USED	VACANT
C	8301-8309	8308
CN	8301-8302	
D	8301-8312	8301, 8302, 8305-8312
IC	8301-8303	8301
JA	8301-8303	
Q	8301-8305	8301, 8303
R	8301-8327	8306-8309, 8311, 8312, 8315, 8317, 8319, 8320, 8322, 8326
TP	8301-8363	

A 1

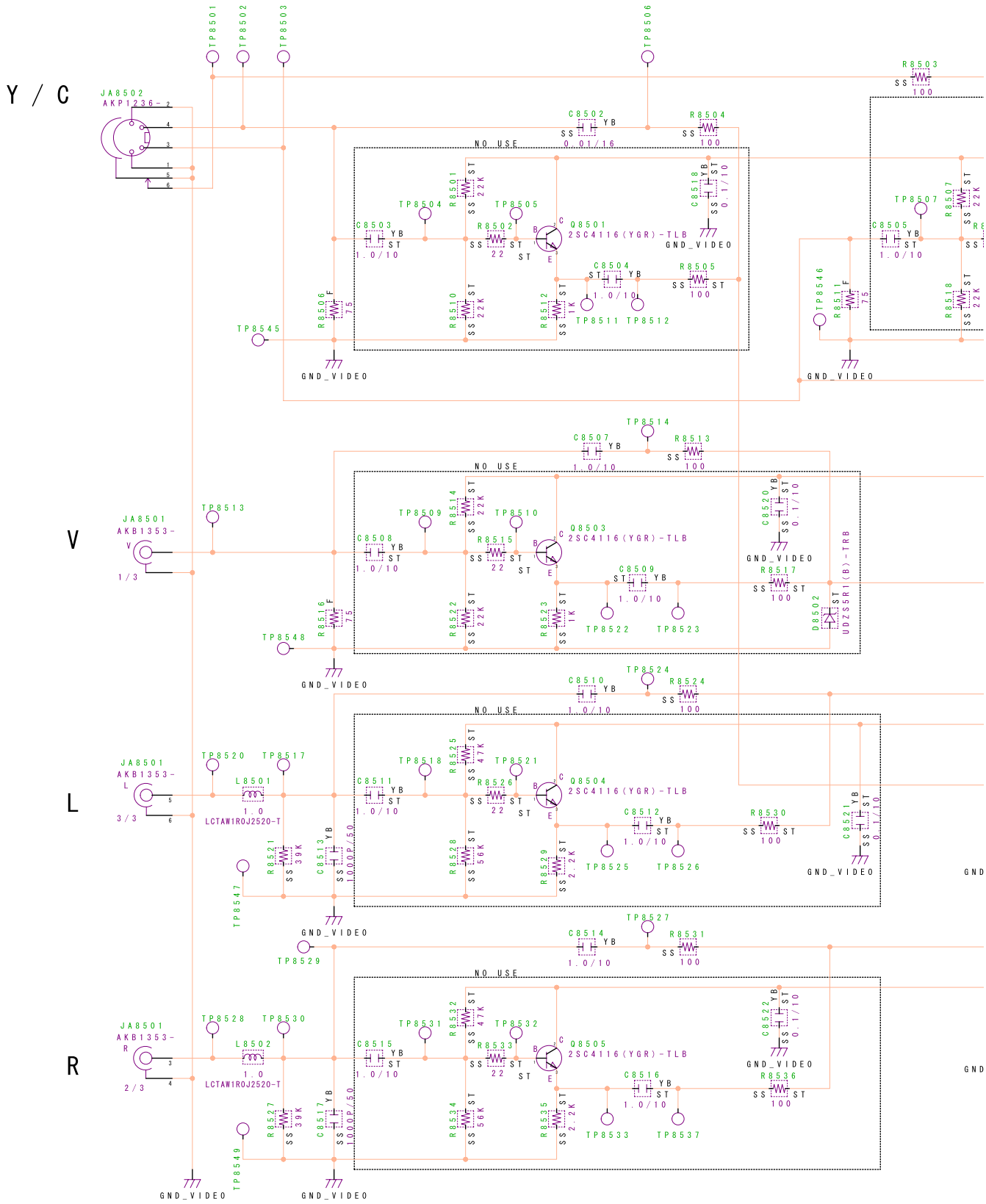
GND
GND
SR_EN_B
GND
REM_IN
GND
SR_IN
V+3_3V_STB_232C
RXD_232C
GND
TXD_232C
V+5_1V_STB_232C

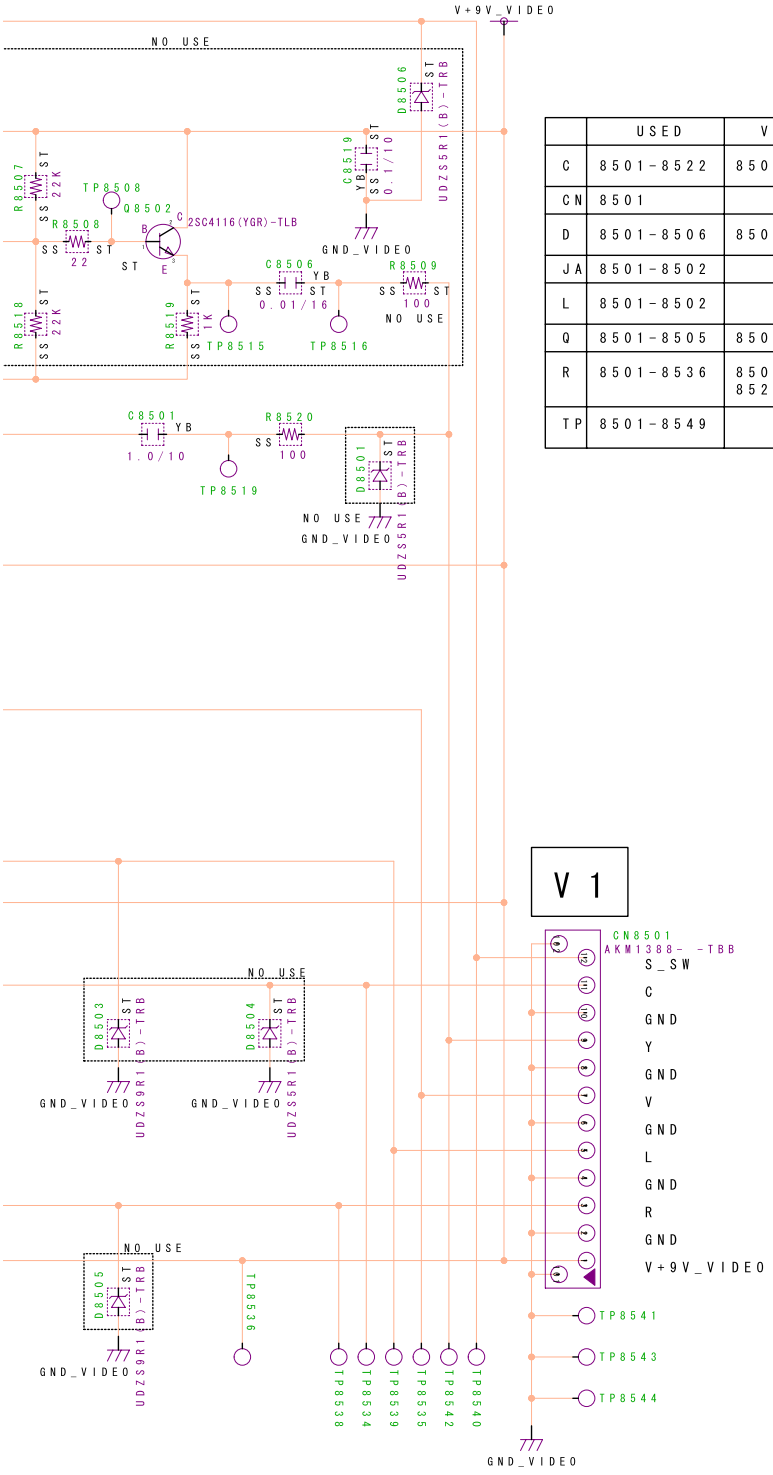
FROM BOARD IF BLOCK

FUKUGOU ASS'Y (2/4)
232C ASS'Y

AWV2521- :AWW1297

10.18 VIDEO ASSY





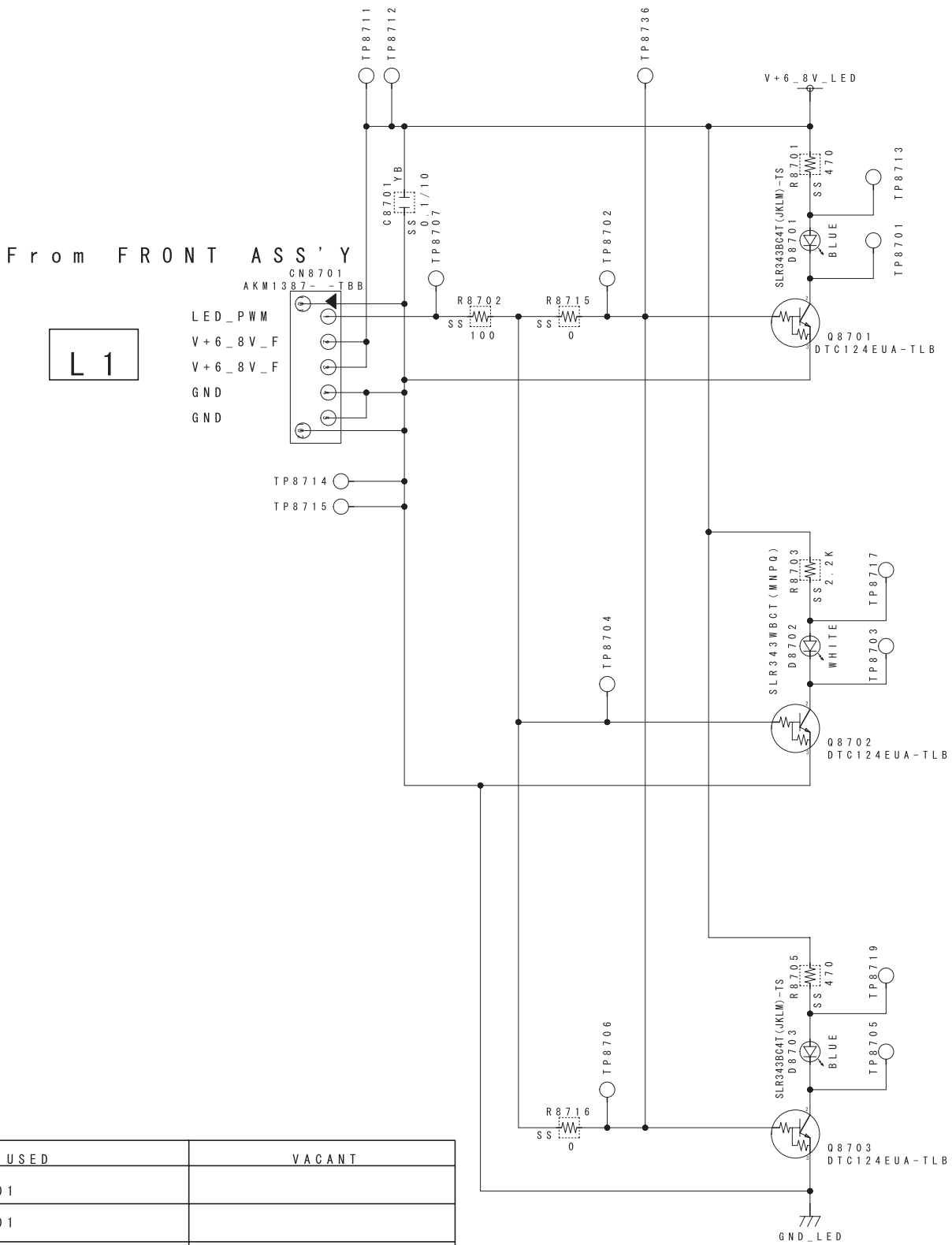
	USED	VACANT
C	8501-8522	8503-8506, 8508, 8509, 8511, 8512, 8515, 8516, 8518-8522
CN	8501	
D	8501-8506	8501-8506
JA	8501-8502	
L	8501-8502	
Q	8501-8505	8501-8505
R	8501-8536	8501, 8502, 8505, 8507-8510, 8512, 8514, 8515, 8517-8519, 8522, 8523, 8525, 8526, 8528-8530, 8532-8536
TP	8501-8549	

FROM BOARD IF BLOCK

FUKUGOU ASS'Y (3/4)
VIDEO ASS'Y

AWV2521- :AWW1298

10.19 LED ASSY



	USED	VACANT
C	8701	
CN	8701	
D	8701-8703	
Q	8701-8703	
R	8701-8703, 8705, 8715, 8716	
TP	8701-8707, 8711-8715, 8717, 8719, 8736	

FUKUGOU ASS'Y (4/4)
LED ASS'Y

10.20 VOLTAGE

FRONT ASSY — MAIN ASSY

CN8001(AKM1390)		Voltage	CN1005(AKM1386)	
No.	Name	(V)	Name	No.
1	V+5V_STB_F	5.1	V+5V_STB_F	1
2	V+6_8V_F	6.8	V+6_8V_F	2
3	LED2(IN1)	0-3.3	LED2(IN1)	3
4	LED3(IN2)	0-3.3	LED3(IN2)	4
5	LED4(IN3)	0-3.3	LED4(IN3)	5
6	LED5(IN4)	0-3.3	LED5(IN4)	6
7	LED6(IN5)	0-3.3	LED6(IN5)	7
8	LED7(IN6)	0-3.3	LED7(IN6)	8
9	LED0(OFF)	0-3.3	LED0(OFF)	9
10	LED1(ON)	0-3.3	LED1(ON)	10
11	LED8(CEC_G)	0-3.3	LED8(CEC_G)	11
12	LED9(CEC_O)	0-3.3	LED9(CEC_O)	12
13	REM	0	REM	13
14	GND	0	GND	14
15	KEY	3.0	KEY	15
16	GND	0	GND	16
17	LED_PWM	3.3	LED_PWM	17

MAIN ASSY — POWER SUPPLY UNIT

CN1004(KM200NA1(		Voltage	CN101(B16B-PH-K-S	
No.	Name	(V)	Name	No.
1	AC_DET	3.3	AC_DET	1
2	RELAY	3.3	RELAY	2
3	GND	0	GND	3
4	V+3_3V_STB	3.3	V+3_3V_STB	4
5	GND	0	GND	5
6	V+5_1V_STB	5.1	V+5_1V_STB	6
7	V+5_1V	5.1	V+5_1V	7
8	V+5_1V	5.1	V+5_1V	8
9	GND	0	GND	9
10	V+6_8V	6.8	V+6_8V	10
11	GND	0	GND	11
12	V+12V	12	V+12V	12
13	GND	0	GND	13
14	V+17V	0	V+17V	14
15	GND	0	GND	15
16	V+35V	36	V+35V	16

232C ASSY — MAIN ASSY

CN8301(AKM1388)		Voltage	CN1002(AKM1385)	
No.	Name	(V)	Name	No.
12	V+5_1V_STB_232C	5.1	V+5_1V_STB_232C	1
11	TXD_232C	3.3	TXD_232C	2
10	GND	0	GND	3
9	RXD_232C	3.3	RXD_232C	4
8	V+3_3V_STB_232C	3.3	V+3_3V_STB_232C	5
7	SR_IN	3.3	SR_IN	6
6	GND	0	GND	7
5	REM_IN	0	REM_IN	8
4	GND	0	GND	9
3	SR_EN_B	3.3	SR_EN_B	10
2	GND	0	GND	11
1	GND	0	GND	12

VIDEO ASSY — MAIN ASSY

CN8301(AKM1388)		Voltage	CN1003(AKM1385)	
No.	Name	(V)	Name	No.
12	S_SW	4.8	S_SW	1
11	C	2.1	C	2
10	GND	0	GND	3
9	Y	2.5	Y	4
8	GND	0	GND	5
7	V	2.5	V	6
6	GND	0	GND	7
5	L	4.5	L	8
4	GND	0	GND	9
3	R	4.5	R	10
2	GND	0	GND	11
1	V+9V_VIDEO	9.0	V+9V_VIDEO	12

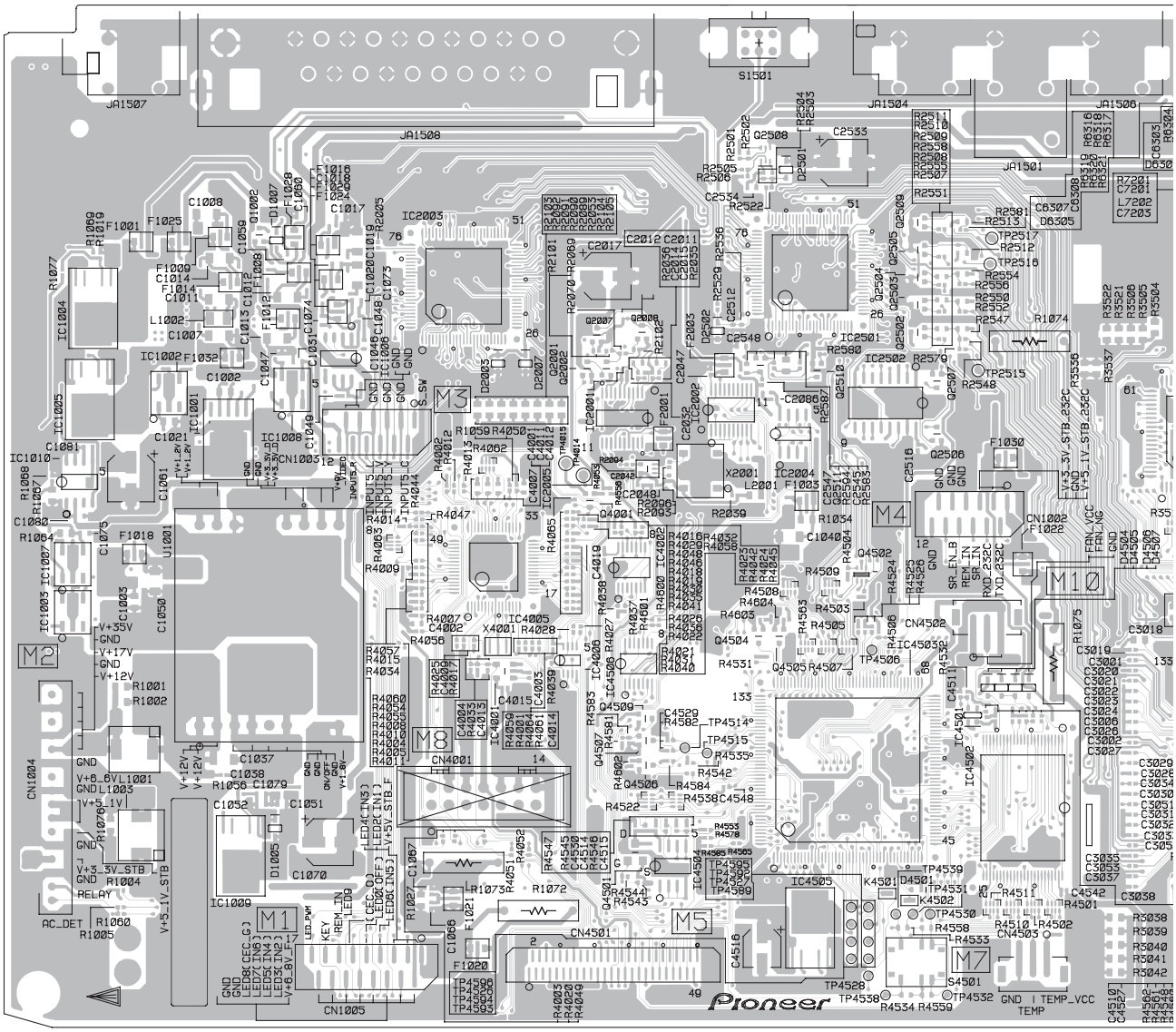
LED ASSY — FRONT ASSY

CN8701(AKM8701)		Voltage	CN8002(AKM1389)	
No.	Name	(V)	Name	No.
1	LED_PWM	3.3	LED_PWM	1
2	V+6_8V_F	6.8	V+6_8V_F	2
3	V+6_8V_F	6.8	V+6_8V_F	3
4	GND	0	GND	2
5	GND	0	GND	3

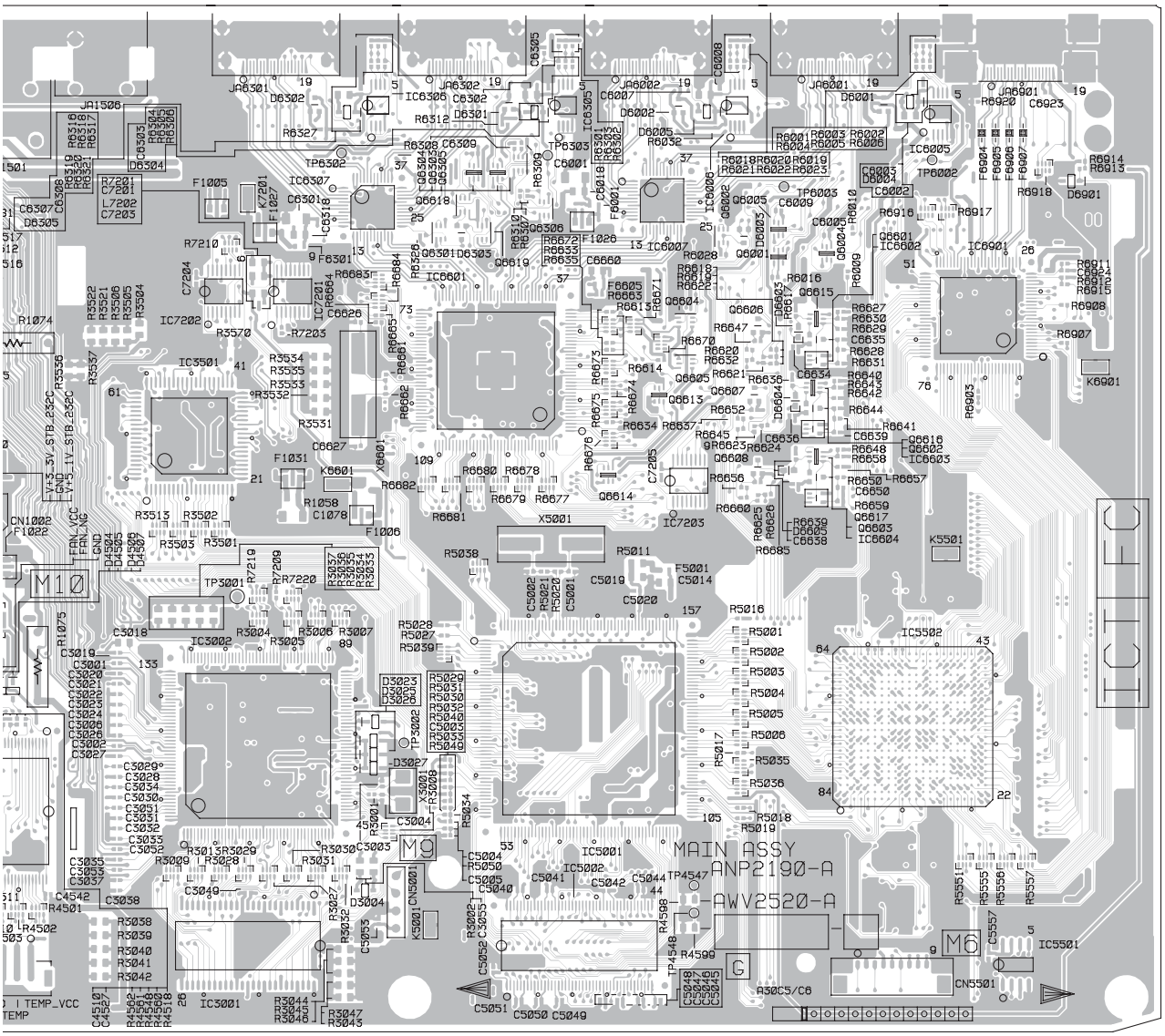
11. PCB CONNECTION DIAGRAM
11.1 MAIN ASSY

MAIN ASSY

SIDE A



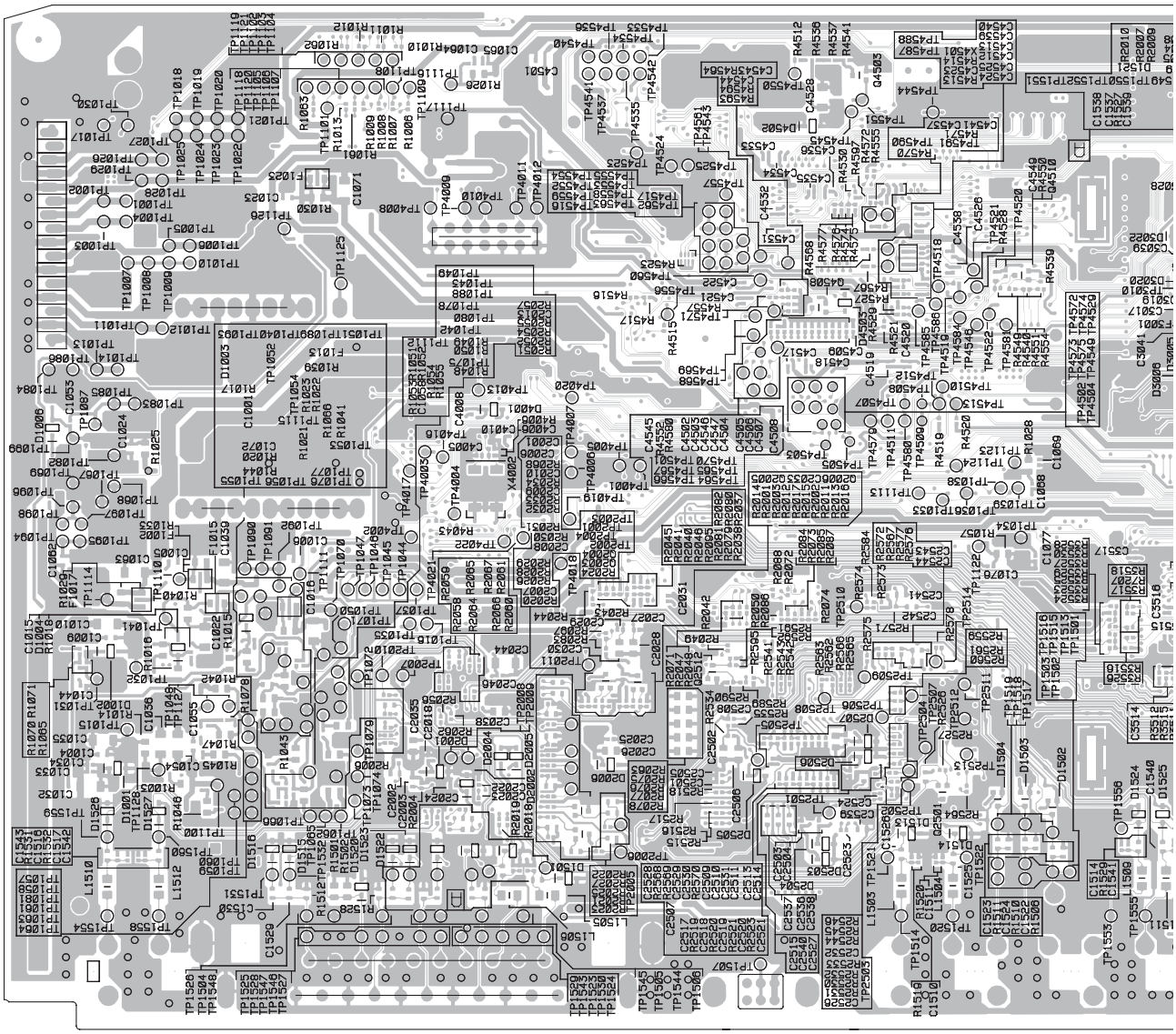
SIDE A



(ANP2190-A)

MAIN ASSY

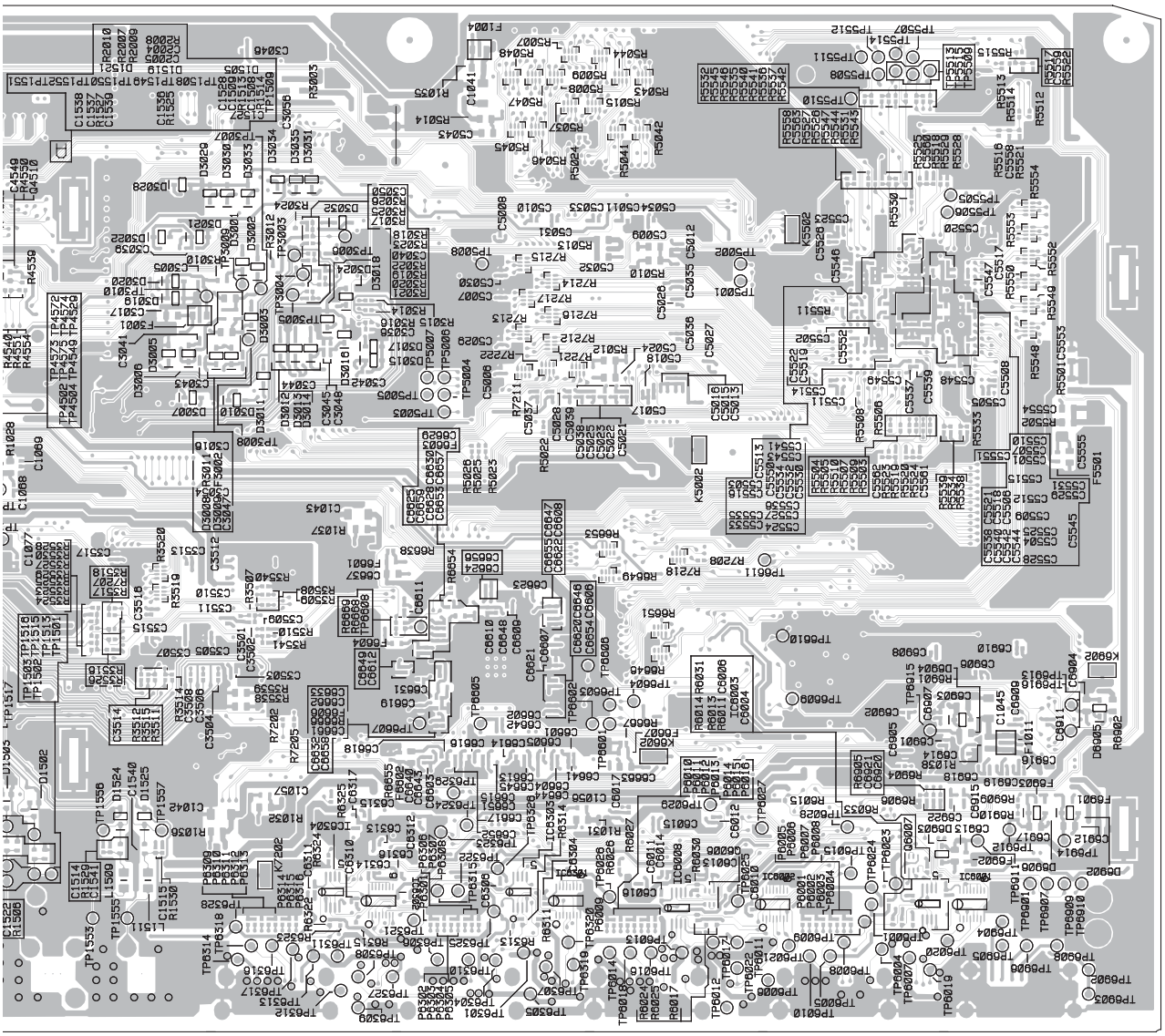
SIDE B



A

SIDE B

B



C

(ANP2190-A)

D

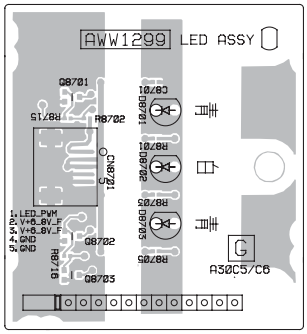
E

F

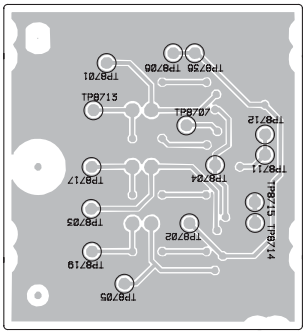
11.2 FRONT, 232C, VIDEO and LED ASSYS

LED ASSY

SIDE A

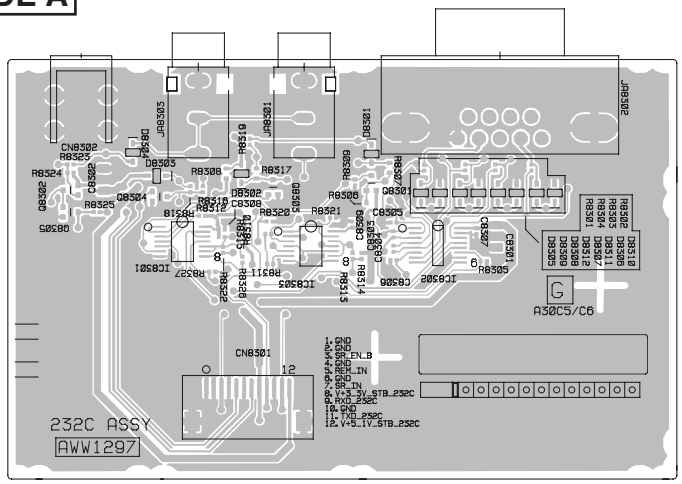


SIDE B

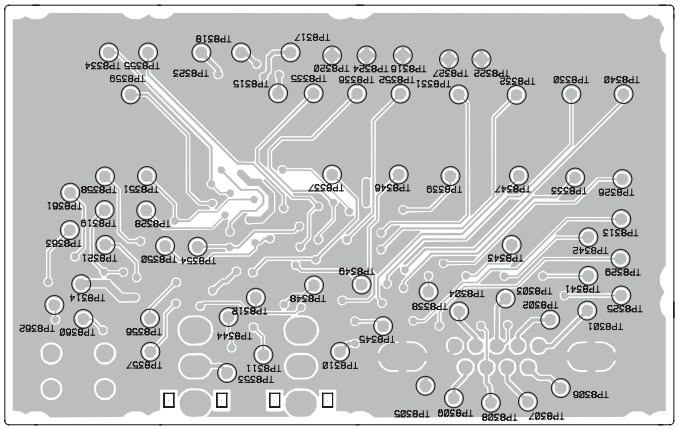


232C ASSY

SIDE A



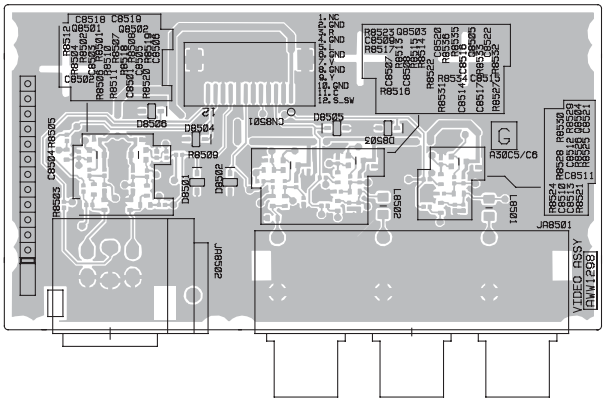
SIDE B



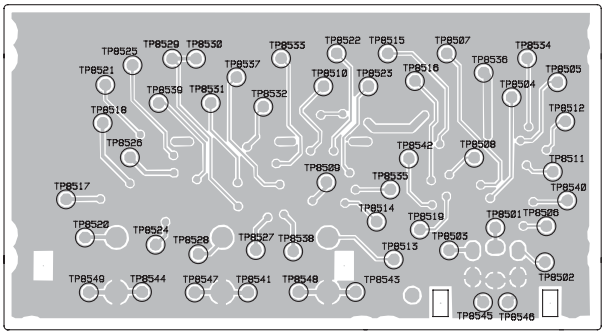
(ANP2191-A)

VIDEO ASSY

SIDE A

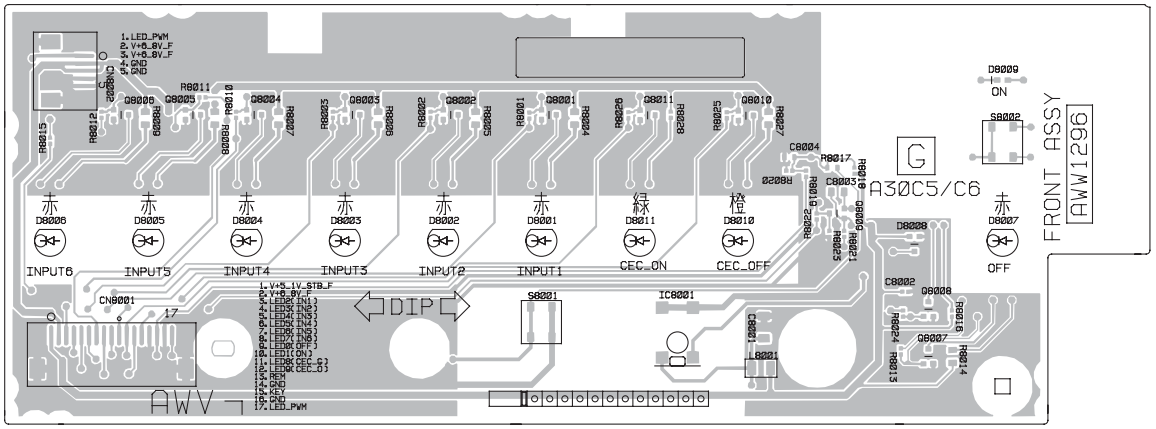


SIDE B

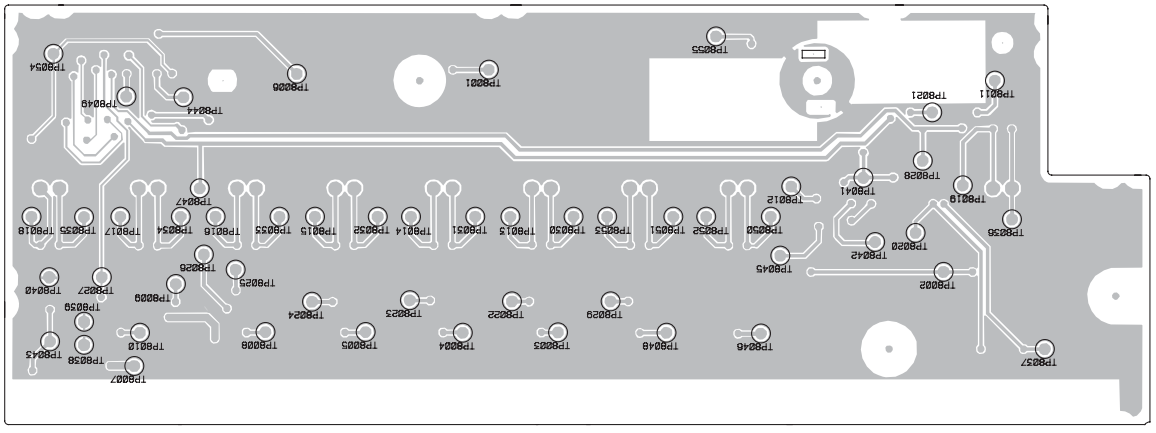


FRONT ASSY

SIDE A



SIDE B



(ANP2191-A)

12. PCB PARTS LIST

NOTES:
- *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *When ordering resistors, first convert resistance values into code form as shown in the following examples.*

Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J=5%, and K=10%).

560 Ω	→ *56 x 10[1]* →	*561*	*RD1/4PU 5 6 1 J*
47k Ω	→ *47 x 10[3]* →	*473*	*RD1/4PU 4 7 3 J*
0.5 Ω	→ *R50*		*RN2H R 5 0 K*
1 Ω	→ *1R0*		*RS1P 1 R 0 K*

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62k Ω	→ *562 x 10[1]* →	*5621*	*RN1/4PC 5 6 2 1 F*

Mark	No.	Description	Part No.
LIST OF ASSEMBLIES			
	1	..MAIN ASSY	AWV2520
NSP	1	..FUKUGOU ASSY	AWV2521
	2	..FRONT ASSY	AWW1296
	2	..232C ASSY	AWW1297
	2	..VIDEO ASSY	AWW1298
	2	..LED ASSY	AWW1299
⚠	1	..POWER SUPPLY UNIT	AXY1205
Unit Name: MAIN ASSY			
SEMICONDUCTORS			
	IC 4005		AGC1065
	IC 4502		AGC1064
Block Name: BOARD IF BLOCK(SW)			
SEMICONDUCTORS			
	IC 1001		NJM2846DL3-18
	IC 1002,1003		S-1132B18-U5
	IC 1004		PQ090DNA1ZPH
	IC 1005		PQ033ENA1ZPH
	IC 1006		BD6522F
	IC 1007		S-1170B15UC-OTA
	IC 1008		PQ1MX55M2SPQ
	IC 1009		PQ050DNA1ZPH
	Q 1002		2SC4116
	D 1001-1007		1SS355
MISCELLANEOUS			
	L 1002	CHIP INDUCTOR	BTH1133
	L 1003	INDUCTOR	BTH1110
	F 1009,1014,1018	EMI FILTER	CCG1162
	CN1002,1003	FFC CONNECTOR 12P	AKM1385
	CN1004	PLUG(16P)	KM200NA16
	CN1005	FFC CONNECTOR 17P	AKM1386
	U 1001	DD CON UNIT	AXY1136
RESISTORS			
	R 1001,1002,1014-1016		RS1/10S0R0J
	R 1021,1029-1040,1042		RS1/10S0R0J
	R 1022		RS1/16SS4702D
	R 1023		RS1/16SS1502D
	R 1043,1048-1050,1055		RS1/10S0R0J
	R 1052		RS1/16SS1002F
	R 1053		RS1/16SS8201F
	R 1058,1067		RS1/10S0R0J
	R 1064		RS1/10S103J
⚠	R 1072,1074,1075		ACN1267
	R 1073		RS1/2LMF2R2J
	Other Resistors		RS1/16SS###J
CAPACITORS			
	C 1001-1003,1015,1021		DCH1201
	C 1004-1006,1056,1057		CKSRYB104K16
	C 1007,1008,1011,1012		BCG1054
	C 1009,1017,1018,1023		CKSRYB105K10
	C 1014,1016,1019,1020		BCG1054
	C 1022,1050		BCG1054
	C 1031,1047,1051,1052		CKSRYB105K10
	C 1032,1036,1037		DCH1165
	C 1033,1034,1038,1048		CKSSYF104Z16
	C 1039-1043,1045,1063		DCH1165
	C 1044		CKSSYB104K10
	C 1046		CKSRYB103K50
	C 1049,1064-1069,1076		CKSSYF104Z16
	C 1058		CKSSYB102K50
	C 1059,1060,1062		CKSRYB105K10
	C 1061		ACH1442
	C 1071,1078		DCH1165
	C 1072-1075		CKSRYB105K10
	C 1077		CKSSYF104Z16
	C 1079		CKSRYB104K16
Block Name: AV IO BLOCK(SW)			
SEMICONDUCTORS			
⚠	D 1501,1505		UDZS9R1(B)
⚠	D 1515,1516,1519-1523		UDZS5R1(B)
MISCELLANEOUS			
	L 1503-1506,1509-1512	CHIP COIL	LCTAW1R0J2520
	JA 1501	JACK	VKB1165
	JA 1504,1506,1507	2P PIN JACK	BKB1017
	JA 1508	RGB CONNECTOR	AKP1266
	S 1501	SLIDE SWITCH	ASG1100
RESISTORS			
	R 1501,1502		RS1/10S151J
	R 1506,1510-1512,1525		RS1/16S75R0F
	R 1527,1528		RS1/16S75R0F
	Other Resistors		RS1/16SS###J
CAPACITORS			
	C 1508-1511,1514-1517		CKSSYB102K50

Mark	No.	Description	Part No.
	C 1522-1530,1536-1543		CKSRYB105K10

Block Name: AV SW BLOCK(SW)

SEMICONDUCTORS

	IC	2001	PCM1803DB
	IC	2002	TC74VHC541FTS1
	IC	2003	R2S11002AFT
	IC	2004	NJU26901E2
	IC	2005	TC7SH08FUS1
	Q	2001	DTC124EUA
	Q	2002	DTA124EUA
	Q	2003,2004	2SA1586
	Q	2005-2008	2SC4116
⚠	D	2006	UDZS5R6(B)
⚠	D	2007	UDZS10(B)

MISCELLANEOUS

⚠	L	2001	CHIP BEEDS FILTER	BTX1042
	F	2001,2003	EMI FILTER	CCG1162
	X	2001	CRYSTAL (18.432 MHz)	ASS1204

RESISTORS

	R	2021,2022	RS1/16S5600F
	R	2024,2027	RS1/16S1800F
	R	2053,2063,2075-2078	RS1/10S0R0J
	R	2089-2092,2103-2105	RS1/10S0R0J
	Other Resistors		RS1/16SS###J

CAPACITORS

	C	2001-2013	CKSRYB105K10
	C	2014,2015	CKSSYB681K50
	C	2017	CEHVKW101M6R3
	C	2018,2022-2025,2027	CKSSYB104K10
	C	2026,2028,2030,2035	ACG7046
	C	2029,2031-2033,2042	CKSSYB104K10
	C	2038	ACG1122
	C	2044	DCH1165
	C	2046-2048,2086	CKSSYB104K10

Block Name: RGB SW BLOCK(SW)

SEMICONDUCTORS

	IC	2501	R2S11001FT
	Q	2501-2505,2509	2SA1586
	Q	2508	HN1B04FU
	Q	2510	2SC4081
	Q	2511,2512	2SC4116
	D	2501	1SS355
⚠	D	2503-2507	UDZS5R6(B)

RESISTORS

	R	2507-2509	RS1/16S1800F
	R	2512,2513	RS1/16S1001F
	R	2526	RS1/16S102J
	R	2534	RS1/16SS1001F
	R	2535	RS1/16SS5601F
	R	2547,2550,2554	RS1/16S5600F
	Other Resistors		RS1/16SS###J

CAPACITORS

	C	2502,2506,2513	ACG7046
	C	2503,2504,2514,2515	CKSSYB104K10
	C	2507,2509-2511	CKSSYF104Z16
	C	2517-2521,2523,2524	CKSSYB103K16
	C	2526-2532	CKSSYB103K16
	C	2533	CEHVKW101M6R3
	C	2534	CKSRYB474K10
	C	2536-2538	CKSRYB105K10
	C	2539	CCSRCH680J50
	C	2540	CCSRCH101J50
	C	2545	CCSQCH103J50
	C	2547	CCSRCH221J50

Block Name: VDEC BLOCK(SW)

SEMICONDUCTORS

	IC	3001	HY57V161610FTP-7
	IC	3002	UPD64015AGM-UEU
⚠	D	3001,3004	UDZS4R3(B)
⚠	D	3002,3003	UDZS2R0(B)

MISCELLANEOUS

	F	3001	EMI FILTER	CCG1162
	F	3002	CHIP FERRITE BEADS	ATF1211
	X	3001	CRYSTAL	ASS1191

RESISTORS

	R	3002,3003,3033-3047	RS1/10S0R0J
	R	3004-3007,3009,3013	RAB4CQ220J
	R	3008,3030-3032	RAB4CQ470J
	R	3010-3012	RS1/16S0R0J
	R	3017	RS1/16SS6200D
	R	3021-3023	RS1/16SS2000F
	R	3024	RS1/16S334J
	R	3025	RS1/16SS2201D
	R	3026	RS1/16SS1001D
	R	3027-3029	RAB4CQ220J
	Other Resistors		RS1/16SS###J

CAPACITORS

	C	3001,3002,3021,3029	CKSSYB103K16
	C	3003,3004	CCSSCH100D50
	C	3005	CCSSCH221J50
	C	3006,3019,3020	CKSSYB104K10
	C	3016-3018,3054	DCH1201
	C	3022-3024,3026-3028	CKSSYB104K10
	C	3030-3033,3035-3050	CKSSYB104K10
	C	3034,3051-3053	CKSSYB103K16

Block Name: ADC BLOCK(SW)

SEMICONDUCTORS

	IC	3501	AD9985KSTZ-110

RESISTORS

	R	3501-3503,3513,3519	RAB4CQ470J
	R	3504-3506,3521,3522	RS1/10S0R0J
	R	3507	RS1/16SS2701F
	R	3520	RAB4CQ470J
	R	3536-3539,3570	RS1/10S0R0J
	Other Resistors		RS1/16SS###J

CAPACITORS

	C	3501	CKSSYB823K10
	C	3502	CKSSYB822K16
	C	3503,3505,3507	CKSSYB104K10
	C	3504,3506,3508	CKSSYB473K16
	C	3509-3517	CKSSYB104K10

Mark	No.	Description	Part No.
		Block Name: IF UCOM BLOCK(SW)	
		SEMICONDUCTORS	
	IC	4001	PST9230N
	IC	4002	TC74VHC08FTS1
	IC	4006	TC7W126FU
	Q	4001	DTA124EUA
⚠	D	4001	UDZS4R3(B)
		MISCELLANEOUS	
	X	4001 CERAMIC RESONATOR	ASS1168
		RESISTORS	
	R	4062	RAB4CQ472J
	R	4063	RAB4CQ103J
	Other Resistors		RS1/16SS###J
		CAPACITORS	
	C	4001,4007,4011,4012	CCSRCH101J50
	C	4002	CCSRCH102J50
	C	4003	CKSSYB472K25
	C	4008-4010,4013-4015	CKSSYB104K10
	C	4019	CKSSYB104K10
		Block Name: MAIN UCOM BLOCK(SW)	
		SEMICONDUCTORS	
	IC	4501	PST3628UR
	IC	4503	MB91305PMC-G-BND
	IC	4504	BR24L64F-W
	IC	4506	TC74VHC08FTS1
	Q	4501	2SJ461A
	Q	4502	HN1K02FU
	Q	4504-4506	DTC124EUA
	Q	4507	2SC4116
	Q	4508,4509	DTA124EUA
	Q	4510	2SA1602A
	D	4501	SML-311UT
	D	4503-4507	1SS355
		MISCELLANEOUS	
	X	4501 CERAMIC OSCILLATOR	CSS1616
		RESISTORS	
	R	4501,4502,4505,4507	RAB4CQ101J
	R	4508,4509	RAB4CQ222J
	R	4510,4511,4538,4563	RAB4CQ101J
	R	4522,4523	RAB4CQ103J
	R	4558,4559	RS1/16S0R0J
	R	4598	RS1/10S0R0J
	Other Resistors		RS1/16SS###J
		CAPACITORS	
	C	4502-4509,4514,4515	CCSSCH470J50
	C	4510	CKSSYB472K25
	C	4511	CKSSYB103K16
	C	4517-4527,4530-4532	CKSSYB104K10
	C	4533-4537,4541	CKSSYF104Z16
	C	4538-4540,4542,4545	CKSSYB104K10
	C	4546,4547	CCSSCH470J50
	C	4549	CCSRCH471J50
		Block Name: IP BLOCK(SW)	
		SEMICONDUCTORS	
	IC	5001	FLI2310-LF-CF
	IC	5002	K4S643232H-TC60
		MISCELLANEOUS	
⚠	F	5001 CHIP FERRITE BEADS	ATF1211
	X	5001 CRYSTAL (13.50MHZ)	ASS1222
		RESISTORS	
	R	5001-5006,5036	RAB4CQ470J
	R	5007,5009,5015,5037	RAB4CQ221J
	R	5008	RAB4CQ680J
	R	5010-5014	RS1/10S0R0J
	R	5038,5039	RAB4CQ103J
	R	5041-5048	RAB4CQ470J
	Other Resistors		RS1/16SS###J
		CAPACITORS	
	C	5001,5002	CCSSCH220J50
	C	5006-5008,5010-5013	CKSSYB104K10
	C	5009,5014,5019,5024	DCH1201
	C	5015-5018,5020-5023	CKSSYB104K10
	C	5025-5031,5033-5042	CKSSYB104K10
	C	5032,5043	DCH1201
	C	5044-5053	CKSSYB104K10
		Block Name: DSEL BLOCK(SW)	
		SEMICONDUCTORS	
	IC	5502	EP2C20F484C8N
		MISCELLANEOUS	
	F	5501 CHIP FERRITE BEADS	ATF1211
		RESISTORS	
	R	5501,5502	RS1/10S0R0J
	R	5548-5557	RAB4CQ680J
	Other Resistors		RS1/16SS###J
		CAPACITORS	
	C	5501-5504	CKSSYB102K50
	C	5505-5552	CKSSYB104K10
	C	5553-5555	DCH1201
		Block Name: HDMI SW1 BLOCK(SW)	
		SEMICONDUCTORS	
	IC	6001,6002	TC7MB3257FK
	IC	6003,6008	PCA9517DP
	IC	6005,6006	BR24L02FV-W
	IC	6007	CXB1442R
	Q	6001	HN1K02FU
	Q	6002,6006,6007	UMD2N
	Q	6004,6005	RN1902
	D	6001-6003	1SS301
	D	6004,6005	UDZS6R8(B)
		MISCELLANEOUS	
	F	6001 CHIP FERRITE BEADS	ATF1211
	JA	6001,6002 HDMI CONNECTOR	AKP1318
		RESISTORS	
	R	6027	RS1/16SS4701F
	Other Resistors		RS1/16SS###J
		CAPACITORS	
	C	6001	BCG1059

Mark	No.	Description	Part No.
C	6003-6006,6008-6017		CKSSYB104K10
C	6018		DCH1201

Block Name: HDMI SW2 BLOCK(SW)

SEMICONDUCTORS

IC	6301,6302		TC7MB3257FK
IC	6303,6304		PCA9517DP
IC	6305,6306		BR24L02FV-W
IC	6307		CXB1442R
Q	6301,6305,6306		UMD2N
Q	6303,6304		RN1902
D	6301-6303		1SS301
D	6304,6305		UDZS6R8(B)

MISCELLANEOUS

F	6301	CHIP FERRITE BEADS	ATF1211
JA	6301,6302	HDMI CONNECTOR	AKP1318

RESISTORS

R	6325		RS1/16SS4701F
Other Resistors			RS1/16SS###J

CAPACITORS

C	6301		BCG1059
C	6303-6306,6308-6317		CKSSYB104K10
C	6318		DCH1201

Block Name: HDMI RX BLOCK(SW)

SEMICONDUCTORS

IC	6601		SII9135CTU
Q	6601		2SA1602A
Q	6604,6605,6618,6619		UMD2N
Q	6606		2SC4081
Q	6613,6614		RN1902
Q	6615		HN1C01FU
D	6603		RB520S-30

MISCELLANEOUS

F	6601-6607	CHIP FERRITE BEADS	ATF1211
X	6601	CRYSTAL RESONATOR	ASS1200

RESISTORS

R	6646,6649,6651,6653		RAB4CQ103J
R	6670,6671		RAB4CQ473J
R	6672		RAB4CQ100J
R	6673-6682		RAB4CQ560J
R	6683,6684		RAB4CQ470J
Other Resistors			RS1/16SS###J

CAPACITORS

C	6601-6624,6628-6633		CKSSYB102K50
C	6625		CKSSYB103K16
C	6626,6627		CCSSCH8R0D50
C	6634,6641-6649		CKSSYB104K10
C	6637,6640,6660,6663		DCH1201
C	6651-6659,6661,6662		CKSSYB104K10

Block Name: HDMI TX BLOCK(SW)

SEMICONDUCTORS

IC	6901		SII9134CTU
D	6901		UDZS5R1(B)
D	6902,6905,6906		UDZS2R4(B)
D	6903,6904		UDZS3R6(B)

Mark	No.	Description	Part No.

MISCELLANEOUS

⚠ F	6901-6903	CHIP FERRITE BEADS	ATF1211
⚠ F	6904-6907	EMI FILTER	ATF1209
JA	6901	HDMI CONNECTOR	AKP7220

RESISTORS

R	6901,6902		RS1/10S0R0J
R	6909		RS1/16SS6800F
R	6916,6917		RAB4CQ100J
R	6918		RAB4CQ182J
Other Resistors			RS1/16SS###J

CAPACITORS

C	6901,6902,6905-6911		CKSSYB104K10
C	6903,6904,6912,6913		DCH1201
C	6914-6916,6918,6919		CKSSYB104K10
C	6917		DCH1201
C	6922,6923		CKSSYB104K10
C	6924		CCSSCH101J50

Block Name: DSEL A BLOCK(SW)

SEMICONDUCTORS

IC	7201-7203		TC74LCX157FTS1

MISCELLANEOUS

⚠ L	7202	CHIP BEEDS FILTER	BTX1042

RESISTORS

R	7201		RS1/10S0R0J
R	7210,7218		RAB4CQ220J
R	7211-7217,7219,7220		RAB4CQ0R0J
R	7221,7222		RAB4CQ101J
Other Resistors			RS1/16SS###J

CAPACITORS

C	7201		DCH1201
C	7203-7205		CKSSYB104K10

Unit Name: FRONT ASSY

SEMICONDUCTORS

IC	8001		SBX3050-01
Q	8001-8008,8010,8011		DTC124EUA
Q	8009		2SA1586
D	8001-8007		SLR-343VC
D	8009		SML412BC5T
D	8010		SLR-343DC
D	8011		SLR343EC4T

MISCELLANEOUS

L	8001	CHIP INDUCTOR	BTH1136
S	8001,8002	SWITCH	VSG1020
CN8001		FFC CONNECTOR 17P RA	AKM1390
CN8002		FFC CONNECTOR 5P RA	AKM1389

RESISTORS

R	8004-8009		RS1/10S561J
R	8014		RS1/10S471J
R	8017		RS1/16S242J
R	8027		RS1/10S391J
Other Resistors			RS1/16SS###J

CAPACITORS

C	8001		BCG1054
C	8002		CKSSYB104K10

Mark	No.	Description	Part No.
C	8003		CKSQYB102K50
C	8004		CCSRCH101J50

Unit Name: 232C ASSY

SEMICONDUCTORS

IC	8302		SP3232ECY
IC	8303		TC74VHC125FTS1
Q	8302		2SA1586
Q	8304,8305		DTC124EUA
D	8303,8304		1SS355

MISCELLANEOUS

JA	8301,8303	JACK	RKN1004
JA	8302	9P D-SUB SOCKET	AKP1213
CN	8301	FFC CONNECTOR 12P RA	AKM1388
	8301	SCREW TERMINAL	VNE1949

RESISTORS

All Resistors			RS1/16SS###J

CAPACITORS

C	8301,8302		BCG1054
C	8303-8307,8309		CKSSYB104K10

Unit Name: VIDEO ASSY

MISCELLANEOUS

L	8501,8502	CHIP COIL	LCTAW1R0J2520
JA	8501	3P PIN JACK	AKB1353
JA	8502	4P MINIDIN SOCKET(S)	AKP1236
CN	8501	FFC CONNECTOR 12P RA	AKM1388

RESISTORS

R	8506,8511,8516		RS1/16S75R0F
Other Resistors			RS1/16SS###J

CAPACITORS

C	8501,8507,8510,8514		CKSRYB105K10
C	8502		CKSSYB103K16
C	8513,8517		CKSSYB102K50

Unit Name: LED ASSY

SEMICONDUCTORS

Q	8701-8703		DTC124EUA
D	8701,8703		SLR343BC4T
D	8702		SLR343WBCT

MISCELLANEOUS

CN	8701	FFC CONNECTOR 5P RA	AKM1387

RESISTORS

All Resistors			RS1/16SS###J

CAPACITORS

C	8701		CKSSYB104K10